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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : G06F 17/60	A2	(11) International Publication Number: WO 00/22560 (43) International Publication Date: 20 April 2000 (20.04.00)
<p>(21) International Application Number: PCT/US99/23590</p> <p>(22) International Filing Date: 12 October 1999 (12.10.99)</p> <p>(30) Priority Data: 09/170,561 13 October 1998 (13.10.98) US</p> <p>(71) Applicant (for all designated States except US): IN-DULGE.COM [US/US]; 342 Madison Avenue, Suite 710, New York, NY 10173 (US).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): HOLT, George, A., III [US/US]; 17 Hemlock Road, Hartsdale, NY 10530 (US). LI, Lehmann [US/US]; 64 East 80th Street, New York, NY 10021 (US).</p> <p>(74) Agents: MAUNE, James, J. et al.; Baker & Botts, LLP, 30 Rockefeller Plaza, New York, NY 10112-0228 (US).</p>	<p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published Without international search report and to be republished upon receipt of that report.</p>	

(54) Title: REPLENISHMENT SYSTEM AND METHOD FOR ELECTRONIC COMMERCE

(57) Abstract

There is provided a system and method for processing orders for products through a network coupled to at least a first computer system and a second computer system. The first computer system has stored therein a database of products and a database of customers. The second computer system has associated therewith an electronic address, which is associated with a customer in the database of customers. The first computer system receives a selection of one or more products from the database of products from the customer. The first computer system then stores data indicating a reorder list for the customer responsive to the selection of one or more products. The first computer system also stores data indicating a reorder frequency for each of the one or more products in the reorder list. The first computer system then transmits to the second computer system an electronic notification over the network regarding at least one item in the reorder list responsive to the reorder frequency data associated with that at least one item. The electronic notification is transmitted using the electronic address of the customer. The electronic notification includes a reorder identifier uniquely associated with the customer and the reorder list.

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REPLENISHMENT SYSTEM AND METHOD FOR ELECTRONIC COMMERCE

SPECIFICATION

BACKGROUND

5 The present invention relates generally to the transaction of commerce on a computer network, such as the Internet. More specifically, the present invention relates to the replenishment of products purchased through a computer network, such as the Internet.

 Electronic commerce (e-commerce) is quickly gaining popularity as an
10 alternative method for selling and purchasing goods and services because e-commerce is able to provide benefits to both the merchant and the customer over traditional business practices. For example, for the merchant, e-commerce may help to reduce the costs and increase the efficiency of inventory management. For the customer, e-commerce may provide better prices and more personalized service.

15 In recent years, an increasingly popular method of conducting e-commerce has been through the World Wide Web (the "Web") with the emergence of web sites specializing in a variety of products. For the purposes of this specification, e-commerce sites on the Web may be split into two categories: those selling consumable goods and those selling non-consumable goods and/or services.

20 Consumable goods are those goods that consumers use up or deplete, such as vitamins, shampoo, and disposable contact lenses, to give just a few examples. Non-consumable goods are those goods that consumers do not use up or deplete (although they may eventually wear out or break down), such as books, music CDs, computers, and automobiles.

25 Because of the nature of the goods it sells, a web site specializing in consumable goods has different user requirements than a web site specializing in non-consumable goods. For example, web sites specializing in consumable goods may attempt to provide some aid for a user to reorder supplies when supplies are expected

to run low. In contrast, such aid is difficult, if not impossible, for non-consumable good suppliers. For example, while a bookstore web site obviously wants to entice a buyer to return to its site in the future, it is difficult to determine when the user should return as well as to suggest what the user should buy.

5 Thus far, the aids provided by the sites specializing in consumable goods have been in the form of historical lists of purchases or reminders based on simple reordering metrics. For example, some sites allow a user to recall a complete purchase history, including dates and description of purchases, which the user may then use to determine his or her needs. Additionally, one site allows a user to recall
10 and reuse a past shopping list, to which additional items may be added and/or existing items may be deleted. Moreover, another site specializing in nutritional supplements provides email reminders to users, reminding them to reorder products. The reminders are based on the daily recommended intake schedules of the actual products sold.

15 The aids provided by existing sites, while somewhat helpful, have disadvantages. With regard to the sites providing historical purchase details, the aid provided is passive in nature and thus requires significant consumer involvement in the reordering process. On these sites, a consumer must spend time recalling his or her historical list and must then analyze the list in some degree to determine his or her
20 current needs. With regard to an email reminder provided on the basis of the daily recommended intake of a product, the reminder may be untimely in many cases. For example, a consumer may not follow the daily recommended intake schedule or a consumer may buy a product for use by more than one person (e.g., for an entire family). In these cases, an email reminder based on daily recommended intake would
25 be useless. Moreover, such an email reminder would not work with consumable products (such as shampoo or soap) that do not have a daily recommended intake schedule. Finally, even if such an email reminder were timely received, a consumer is required to spend time revisiting a site and reprocessing an order each time a product is needed.

30 Accordingly, it is greatly desirable to provide a system and method that actively manages, simplifies, and facilitates the reordering and replenishment of

consumable products.

SUMMARY OF THE INVENTION

According to one aspect of the present invention, there is provided a method for processing orders for products through a network coupled to at least a first
5 computer system and a second computer system. The first computer system has stored therein a database of products and a database of customers. The second computer system has associated therewith an electronic address associated with a customer in the database of customers. The method includes: receiving at the first computer system a selection of one or more products from the database of products
10 from the customer; storing data in the first computer system indicating a reorder list for the customer responsive to the selection of one or more products; storing data in the first computer system indicating a reorder frequency for each of the one or more products in the reorder list; and transmitting an electronic notification over the network regarding at least one item in the reorder list responsive to the reorder
15 frequency data associated with the at least one item. The electronic notification is transmitted from the first computer system to the second computer system using the electronic address of the customer. The electronic notification includes a reorder identifier uniquely associated with the customer and the reorder list.

The method may further include the step of receiving a communication at the
20 first computer system from the customer that includes the reorder identifier to identify to the first computer system that the communication is in regard to the customer and the reorder list.

Preferably, the network is the Internet and the electronic address is an email address. Preferably, the electronic notification is transmitted from the first computer
25 system to the second computer system using the SMTP protocol.

Preferably, the reorder identifier is a URL, which includes a base address and one or more appended arguments. The base address may correspond to a CGI script or to an ASP server. The reorder identifier may also be a URL that is included in an HTML page attached to the electronic notification.

Preferably, the reorder identifier is uniquely associated with the electronic notification.

Preferably, the reorder identifier is associated with a web page that includes information relating to the reorder list.

5 The method may further include the step of receiving at the first computer system data from the customer indicating a reorder frequency for each of the one or more products in the reorder list.

 The step of storing data indicating a reorder frequency may comprise assigning a reorder frequency to at least one item in the reorder list based on consumption
10 statistics for the at least one item. The consumption statistics may be the average consumption of the at least one item by a group of people. In addition, the consumption statistics may be based on the demographic characteristics of the customer.

 The step of storing data indicating a reorder frequency may comprise assigning
15 a reorder frequency to at least one item in the reorder list based on the past history of purchases of the customer. In addition, the step of storing data indicating a reorder frequency may comprise assigning a reorder frequency to at least one item in the reorder list based on the past history of purchases of customers in the database of customers having similar profiles to the customer. The similar profiles may be based
20 on demographic characteristics.

 The method may further include the step of storing a voice message on a voice mail service of the customer, notifying the customer that the electronic notification has been transmitted. Additionally, the method may include the step of storing a voice message on an answering machine of the customer, notifying the customer that the
25 electronic notification has been transmitted.

 Preferably, the database of customers includes a customer identifier and a customer password associated with the customer, and the method further includes the steps of: receiving a communication by the first computer system over the network of the customer identifier and the customer password of the customer; receiving an
30 additional selection of one or more products from the database of products from the customer; storing data in the first computer system indicating a shopping basket for

the customer responsive to the additional selection of one or more products; and transferring at least one item from the shopping basket to the reorder list.

In another aspect of the present invention, there is provided a data processing system for processing orders for products over a network coupled to at least one computer system. The data processing system includes: a memory storage unit has stored therein a database of products and a database of customers, a customer in the database of customers has associated therewith an electronic address associated with the at least one computer system; means for receiving a selection of one or more products from the database of products from the customer; means for storing in the memory storage unit data indicating a reorder list for the customer responsive to the selection of one or more products; means for storing in the memory storage unit data indicating a reorder frequency for each of the one or more products in the reorder list; and means for transmitting from the data processing system to the at least one computer system an electronic notification over the network regarding at least one item in the reorder list responsive to the reorder frequency data associated with the at least one item. The means for transmitting uses the electronic address of the customer. The electronic notification includes a reorder identifier uniquely associated with the customer and the reorder list.

In yet another aspect of the present invention, there is provided a system for ordering products over a network, which includes: a first computer system coupled to the network, the first computer system having stored therein a database of products and a database of customers; a second computer system coupled to the network, the second computer system having associated therewith an electronic address associated with a customer in the database of customers; means for selecting one or more products from the database of products by the customer to establish a reorder list; means for associating a reorder frequency with each of the one or more products in the reorder list; means for storing each of the one or more products and its associated reorder frequency on the first computer system; and means for transmitting from the first computer system to the second computer system an electronic notification regarding at least one item in the reorder list based on the reorder frequency associated with the at least one item. The means for transmitting uses the electronic address of

the customer. The electronic notification includes a reorder identifier uniquely associated with the customer and the reorder list.

BRIEF DESCRIPTION OF THE DRAWINGS

Exemplary embodiments of the present invention will now be described in detail with reference to the accompanying drawings in which:

Fig. 1 is a functional block diagram of a virtual store according to a preferred embodiment of the present invention;

Fig. 2 is a diagram of a preferred embodiment of the main site page for a web site according to the present invention;

Fig. 3 is an illustration of a preferred embodiment of the header frame of Fig. 2;

Fig. 4A is an illustration of a preferred embodiment of the browse frame of Fig. 2;

Fig. 4B is a web page including an example of a subcategory list;

Fig. 4C is a web page including an example of a product list;

Fig. 4D is a web page including an example of specific product information;

Fig. 4E is a web page including another example of specific product information;

Fig. 5 is a flowchart of the steps involved in browsing through the category and subcategory links for a specific product according to a preferred embodiment of the present invention;

Fig. 6A is an illustration of a preferred embodiment of the shopping basket frame of Fig. 2, with the shopping basket empty;

Fig. 6B is an illustration of a preferred embodiment of the shopping basket frame of Fig. 2, with the shopping basket containing an item;

Fig. 7 is a flowchart of the steps of the check-out process according to a preferred embodiment of the present invention;

Fig. 8A is an illustration of a web page containing fields for the entry of shipping information, according to a preferred embodiment of the present invention;

Fig. 8B is an illustration of a web page for final purchase approval, according

to a preferred embodiment of the present invention;

Fig. 9 is an illustration of a web page containing order history information, according to a preferred embodiment of the present invention;

Fig. 10 is a flowchart of the steps for a login procedure according to a preferred embodiment of the present invention;

Fig. 11 is an illustration of a web page containing fields for the entry of login information, according to a preferred embodiment of the present invention;

Fig. 12 is an illustration of a web page containing fields for the entry of registration information, according to a preferred embodiment of the present invention;

Fig. 13A is an illustration of a web page containing fields for the entry of shipping information, according to a preferred embodiment of the present invention;

Fig. 13B is an illustration of a web page containing fields for the entry of payment information, according to a preferred embodiment of the present invention;

Fig. 14 is an illustration of a web page containing options for monthly list editing, according to a preferred embodiment of the present invention;

Fig. 15 is an illustration of a web page containing monthly list information, according to a preferred embodiment of the present invention;

Fig. 16A is an illustration of an email notification according to a preferred embodiment of the present invention; and

Fig. 16B is another illustration of an email notification according to a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Fig. 1 provides a functional block diagram of a virtual store according to a preferred embodiment of the present invention. Preferably, the virtual store of the present invention sells consumable goods, such as personal and healthcare products. The virtual store includes a web site 10, an order fulfillment center 20, a web site administration and management center 30, a customer service headquarters 40, and a payment processing center 50. Although all of these functions may be performed at a single location by a single organization, many of these functions (such as order

fulfillment, web site management, customer service, and payment processing) may be contracted out to well-established independent third parties, who specialize in such functions. As shown in Fig. 1, information may be exchanged with such third parties through the Internet/public telephone network 60.

5 The web site 10 of the present invention comprises an automated process that depends on a collection of hardware and software. As shown in Fig. 1, the hardware includes server computers 100 to 105, such as the Compaq ProLiant 3000 Servers from Compaq Computer Corp. of Houston, Texas. Preferably, the server computers provide hot-swappable mirrored hard drives and power supplies. The hardware also
10 includes load balancing equipment 106, such as the Cisco LocalDirector product from Cisco Systems of San Jose, California. Load-balancing hardware allows multiple server computers to be represented by a single virtual IP address and balances Web requests to that IP address among the multiple servers running behind it. Thus, load-balancing hardware allows the appearance of a single Web server to the Internet user,
15 but behind the load-balancing hardware there may be many physical network servers acting in conjunction. Load-balancing hardware also allows a web site to be easily scaled for greater web traffic by simply adding more physical servers.

 The web site 10 also includes an ethernet switch 108, a firewall server 110, and a router 112, coupled in series as shown in Fig. 1. The router 112 provides an
20 interface between the Internet 60 and the internal network of the web site serviced by the ethernet switch 108. The router may be, for example, the Cisco 7500 Series core router (Exodus N.O.C.) from Cisco Systems, Inc. The ethernet switch 108 may be the Intel Express 510T from Intel Corporation.

 The web site 10 may also include a modem 114 for communication through
25 the telephone system with third party service providers who do not have Internet connectivity. Alternatively, the modem 114 may be used a backup communication device with third party service providers who do have Internet connectivity.

 The firewall server 110, positioned between the router 112 and the ethernet switch 108, provides the security features that are preferred for an online commerce
30 application. These security features prevent unauthorized access to sensitive information such as inventory, customer information, and order history. Without

security to protect it, this information might be used by non-authorized persons for criminal or malicious purposes.

Firewall servers are well-known in the industry. A firewall server includes a workstation or server computer running firewall software. The firewall workstation or
5 server computer may be, for example, the Sun Ultra 5 from Sun Microsystems, Inc. The firewall software preferably provides a good front end for managing security. In addition, the firewall software preferably offers a stateful inspection mechanism, which utilizes communication-derived and application-derived state and context information. Stateful inspection makes it possible to upgrade a web site on a
10 continuous basis, even as new protocols and applications become part of the Internet. An example of firewall software that utilizes stateful inspection is Check Point FireWall-1 software from Check Point Software Technologies, Ltd., of Redwood City, California.

In addition to firewall software, the web site 10 preferably also utilizes Access
15 Control Lists (ACLs) in its router 112 for inter-application server communication. The web site 10 should also have the capability to encrypt all information if necessary. Preferably, the web site uses encryption whenever sensitive information is transmitted or data is likely to be snooped. For example, all web pages involving any customer information are preferably encrypted using Secure Sockets Layer (SSL), which is built
20 into most web browsers.

The application environment of the virtual store according to the present invention can be best described as a web-enabled, multi-tier system. As the description indicates, there are multiple tiers involved in the application. The first tier, or front end, is comprised of web browsers (not shown), such as Netscape
25 Navigator from Netscape Corp. and Internet Explorer from Microsoft Corp., which are used by the customers of the virtual store. The first tier includes the web pages that are visible with the web browsers.

The second or middle tier of the system includes one or more web servers 100. The web servers 100 form the communication hub of the virtual store. The web
30 servers 100 assemble and provide the web pages viewed by customers with their web browsers. The web servers are accessed at a unique address referred to as a Universal

Resource Locator (URL). (As discussed previously, the load balancing equipment 106 balances the web requests to this address among the multiple web servers.) An example of a URL for a web site's main page is "www.mybasics.com."

Preferably, the web pages generated by the web servers 100 are dynamic
5 pages. Dynamic page generation allows the end user to receive a page incorporating both static and dynamic content. The static content may include corporate logos, images and help information, while the dynamic content may include product, price, and customer account information. The dynamic content of web pages typically is stored in a database.

10 The web servers 100 also provide the interface to the back-end systems that handle the data and the transactions associated with an electronic commerce site. For example, the web site 10 may include a database server 102 and an email server 104. The database server 102 stores all customer account, customer order, and product information in relational databases. The email server 104 allows email
15 communication with customers. Preferably, there is also provided a standby database server 103 and a standby email server 105. The standby servers are used in case the normally functioning servers malfunction or are unavailable due to maintenance.

The web servers 100, database server 102, and email server 104 may run any well-known operating system and server software. For example, all of the servers
20 may run the Microsoft Windows NT 4.0 operating system. In addition, the web servers 100 may run the Microsoft Internet Information Server (IIS) web server software. The web server software may be enhanced by any well-known e-commerce software, such as Microsoft Site Server software, which provides the functionality necessary to build simple e-commerce sites, such as order processing and customer
25 database wizards. If dynamic page generation is used, dynamic page generation software may be used, such as Microsoft Active Server Pages software, which is a component of the Microsoft Site Server software.

The database server 102 and standby database server 103 may run any well-known database software, such as Microsoft SQL 6.5 Server software. The email
30 server 104 and standby email server 105 may use any well-known SMTP-compatible email server software, such as SLmail software from Seattle Lab of Bothell,

Washington.

A virtual store according to the present invention preferably offers at least two sales models. In the first sales model, a customer may make a one-time order. The virtual store should provide this capability because most users will probably want to try a store's service before becoming a regular customer of the store. The second sales model is that of the regular customer, who sets up a list of regular orders that are shipped periodically to the customer. The customer can use the regular list to replenish consumable products with significantly less difficulty than reordering everything by browsing and searching. The equivalent process in a physical store would be a customer walking in and having his or her shopping cart already filled with all the products he or she wants.

The features of the web site 10 of Fig. 1 will now be discussed. The unique nature of a web application, in which every web page can provide hyperlinks to every other web page, makes it difficult to discuss functionality in a serial fashion. Nonetheless, this specification provides the basic features that customers utilize when executing a transaction on a web site according to the present invention. Each basic feature may be considered atomic in nature. Yet it must be realized that many of these features may be interlinked from many different web pages.

Fig. 2 illustrates the preferred components of the main site page for a web site according to the present invention. Preferably, the main site page includes three frames: a header frame 210, a browse frame 220, and a shopping basket frame 230.

Fig. 3 shows a preferred embodiment of the header frame 210 of Fig. 2. The header frame 210 contains a login hyperlink 310 to a login page, an account/order hyperlink 320 to an account and order page, and a help/customer-service hyperlink 330 to a help and customer service information page. The header frame 210 also includes a search prompt 340, which allows entry of a product name or keyword to search for on the web site. Preferably, the header frame 210 is included in every web page generated for the web site 10.

Fig. 4A shows a preferred embodiment of the browse frame 220. The browse frame 220 contains a plurality of category hyperlinks 410 corresponding to the main product categories of the web site 10. Underneath each category hyperlink 410, there

may be one or more levels of subcategory links 420. The category and subcategory hyperlinks allow a user to shop for items by browsing through a hierarchical list of category and subcategory links until a specific product is found.

Fig. 5 provides a flowchart of exemplary steps involved in browsing through the category and subcategory links for a specific product. In step 500, the browse frame 220 (Fig. 4A) is displayed. When a category hyperlink 410 is selected from the browse frame 220, a list of subcategory hyperlinks 420 is displayed in step 510. For example, by selecting the "Men's Products" category hyperlink in Fig. 4A, the subcategory list of Fig. 4B may be displayed in web page 400a. When a subcategory hyperlink 420 is selected in either steps 500 or 510, a product list for that subcategory is displayed in step 520. For example, by selecting the "Razors and Blades" subcategory hyperlink in Fig. 4B, the product list of Fig. 4C may be displayed in web page 400b. As shown in Fig. 4C, the product list preferably contains a product's description, size, and price. At this point, by selecting a specific product from the product list, a web page containing information about that specific product is displayed in step 530. Examples of web pages 400c and 400d for specific products are shown in Figs. 4D and 4E.

In addition to information about a product, the specific product page includes an add-item hyperlink 430 and a quantity field 440. The add-item hyperlink 430 allows a user to add an item to the user's shopping basket (shown in Fig. 4D) or to the user's monthly list (shown in Fig. 4E), both of which will be discussed in more detail below. The quantity field 440 allows a user to select the number of an item to add to the shopping basket or monthly list.

If a user selects the add-item hyperlink 430, the system checks, in step 540, whether the user is logged in to the web site 10. Preferably, the user must be logged in to the web site to add items to a shopping basket or a monthly list. Accordingly, if a user is not logged into the system, a login prompt (to be discussed more fully below) is displayed. If a user is logged in, the item selected by the user is added to the user's shopping basket or monthly list in step 550. The shopping basket frame or monthly list is then updated.

Figs. 6A and 6B show preferred embodiments of the shopping basket frame 230. The shopping basket frame 230 contains a check-out hyperlink 610 for a check-out process, an empty-basket hyperlink 620 to empty the shopping basket, and an add-item hyperlink 630 to add items in the shopping basket to the user's monthly list. In addition, the shopping basket contains a display area 640 for displaying the products currently in a user's shopping basket. Fig. 6A shows the display area 640 with a message indicating the basket is empty. Fig. 6B shows the display area 640 when a product has placed in the shopping basket. When a product has been placed in the shopping basket, the display area 640 contains a quantity field 650 and an update hyperlink 660. A user may edit the quantity of a product by entering a new quantity number in the quantity field 650 and selecting the update hyperlink 660. By entering a zero value in the quantity field 650, a product may be deleted from the shopping basket.

The shopping basket is maintained as long as a user is logged in to the web site and has not finished the check-out process. Items may be added at any time through the browsing procedure available through the browse frame or the search procedure available through the search prompt of the header frame. When items are placed in the basket, they may be edited or deleted from the basket at any time by entering a new quantity in the quantity field 650 and selecting the update link 660. The entire basket may also be deleted at any time by pressing the empty-basket hyperlink 620.

A user may also choose to add items in the shopping basket to a monthly list by selecting the add-item hyperlink 630. If the user decides to use the current basket to create or edit a monthly list, the system enters a monthly list management process, to be discussed below. Otherwise the user finishes adding items to the current basket and enters the check-out process by selecting the check-out hyperlink 610.

Fig. 7 shows a preferred embodiment of the steps of the check-out process. In step 700, when the check-out hyperlink 610 in the shopping basket has been selected, a shipping instructions page is displayed. An example of such a web page 800a is shown in Fig. 8A. The shipping instruction page contains a check box 805 indicating whether the user will accept partial shipments, a field 810 indicating the shipping

method, and a name field 820, one or more address fields 830, and telephone number field 840. Preferably, the values in these fields default to the user's name, address, and telephone number (which is known once the user logs in to the system).

The shipping information page contains a continuation hyperlink 850, labeled
5 "total," which indicates that the user is finished entering the shipping information. When this hyperlink is selected, a final purchase approval page is displayed in step 710 (Fig. 7). An example of the final purchase approval page 800b is shown in Fig. 8B. The page contains purchase total information 860, credit card information 870, and billing information 880. The page also contains a completion hyperlink 890,
10 labeled "purchase," which indicates completion of the purchase. Since some users may be concerned about providing credit card information over the Internet (even though such information is preferably encrypted), payment information may be provided instead to a customer service representative over the telephone.

Returning to Fig. 7, when a user selects the completion hyperlink 880,
15 payment processing is performed in step 720. Payment processing includes receiving an authorization for the purchase amount from the user's credit card institution. If authorization is received, in step 730, the user's order is registered and collected in a batch with other orders. The batches of orders are periodically transmitted to the order fulfillment center throughout a day. For example, the batches may be sent three
20 times a day at 3:00 PM, 10:00 PM, and 3:00 AM. In step 740, a status message is displayed to the user indicating whether submission of the order was successful. If submission of the order was successful, a reference number for the order is returned to the user for tracking purposes or for other inquiries concerning the order.

A user may track and manage orders through the account/order hyperlink 320
25 (Fig. 3) of the header frame. Fig. 9 shows a example of an account/order page 900 that is displayed when the account/order hyperlink 320 is selected. The order/account page 900 contains the name of the user 910 (which is known to the system once the user logs in) and an order history list 920 for the user. The order history list 920 preferably contains the order reference number, order date, purchase amount, status of
30 the order, and the shipping tracking number. The order/account page also contains an account hyperlink 930, which provides a user with the ability to update account

information. The order/account page also contains a continuation hyperlink 940, which allows a user to continue shopping on the web site.

Preferably, prior to shopping, a user must login to the web site. The login process identifies a user to the system. The user may login by pressing the login
5 hyperlink 310 in the header frame (Fig. 3). Alternatively, if a user attempts to add an item to the shopping basket before logging in, a login prompt is automatically presented to the user.

Fig. 10 shows a flowchart of the steps for a preferred embodiment of the login procedure. In step 1000, a login page is displayed. An example of a such a page 1100
10 is shown in Fig. 11. The login page contains an identification field 1110, such as a user's email address, and a password field 1120. The login prompt also contains a completion hyperlink 1130, labeled "lookup," which indicates that a user has finished entering the login information, and a registration hyperlink 1140 for new users.

When a user selects the completion hyperlink 1130, the system queries the
15 customer database (in the database servers) with the login information in step 1010. In step 1020, it is determined if the identification information has been found in the customer database and the password is correct. If the identification information has been found and the password is correct, in step 1040, the system checks whether the user was attempting to add an item to the shopping basket prior to logging in. If so,
20 the item is added to the shopping basket in step 1150. In step 1070, the system returns the user to the last web page the user was viewing prior to logging in. If the user's identification information is not found in the customer database or the password is incorrect, an error message is displayed in step 1030.

When a user first visits the web site 10, the user preferably must register with
25 the system prior to being able to shop or create a monthly list. New users may register at any time while browsing the site by selecting the login hyperlink 310 (Fig. 3) on the header frame and then selecting the registration hyperlink 1140 (Fig. 11) on the login prompt page. Preferably, registration is performed through a single web page, such as the page 1200 shown in Fig. 12. On the registration page, a user is preferably
30 requested to enter such information as name 1210, email address 1220, password 1230, mailing address 1240 (which may be used as a default shipping and billing

address), and telephone number 1250. When a user is finished entering registration information, a completion hyperlink 1260, labeled "register," may be selected.

Optionally, the registration procedure may allow a single user to set up multiple accounts, with multiple billing and shipping addresses (not shown in the figures). Multiple billing and shipping addresses may be useful when a single user is responsible for shopping for multiple parties. For example, the child of a senior citizen may take on the responsibility for shopping for his or her parent as well as himself or herself. In this case, different orders may need to be shipped to different addresses. When multiple accounts are set up, the address to which an order should be shipped may be indicated by an account identification during the login procedure (not shown in the figures).

Advantageously, according to the present invention, the web site allows a user to create a regular reorder list. This list enables a user to easily manage items that the user orders on a regular basis. If a user has set up multiple accounts, the user may have multiple regular order lists, which are independent of each other.

Each item in the reorder list may have an independent cycle for replenishment. For instance, a user may create a list in which one item is reordered weekly, another is reordered monthly, and yet another is reordered every three months. Preferably, though, replenishment cycles in the system are based on a monthly unit of time. Month-based reordering is preferred to keep list management as simple as possible for both the user and the replenishment management system. Nonetheless, any reorder frequency may be used according to the present invention.

Once a customer creates a monthly list, that customer need never order using a shopping basket again. While it is possible for the customer to return and put in single orders at any time, it is also possible for the customer to place all subsequent orders by adding, removing, and re-timing items on the monthly list.

A monthly list is created or edited by selecting the add-item hyperlink 630 (Fig. 6) in the shopping basket, which is labeled "Add to Monthly List." If a monthly list does not exist, a user is prompted to enter shipping and billing information in web pages 1300a and 1300b as shown in Figs. 13A and 13B, respectively. This information is the same as that requested during the check-out process, which was

described with reference to Figs. 8A and 8B. For those users concerned about transmitting billing information over the Internet, billing information may be submitted instead to a customer service representative using the telephone. This billing information may then be saved to the user's account, or the user may choose to resubmit the information using the telephone each and every time the monthly list is due for replenishment.

If a monthly list already exists when a user selects the add-item hyperlink 630, the user is given three options as illustrated in Fig. 14. The user may select one of the following hyperlinks in web page 1400: an add-basket hyperlink 1410, a replace-list hyperlink 1420, and an edit-list hyperlink 1430. If a user selects the add-basket hyperlink 1410, the items in the user's shopping basket are added to the user's monthly list. If a user selects the replace-list hyperlink 1420, the user's monthly list is replaced by the items in the user's shopping basket. If a user selects the edit-list hyperlink 1430, the user is simply transferred to his or her monthly list, which the user may then edit.

Alternatively, if a monthly list already exists, a user may edit his or her list through the account/order page 900 (Fig. 9). In this case, the account/order page 900 may include a hyperlink to the user's monthly list (not shown in Fig. 9).

Fig. 15 shows a preferred embodiment of a user's monthly list. The monthly list comprises a web page 1500 including several columns: a delete column 1510, an item column 1520, a quantity column 1530, a unit price column 1540, a frequency column 1550, a subtotal column 1560, and an estimated arrival column 1570. The delete column 1510 allows a user to delete an item from the monthly list by selecting the hyperlink in that column for an item. The item column 1520 provides a brief description of each item in the monthly list. The quantity column 1530 provides a display of the number of an item to be shipped. The quantity of an item may be changed by selecting the appropriate "+" or "-" hyperlink in the quantity column. The unit price column 1540 displays the unit price of an item. The frequency column 1550 displays the reorder frequency of an item. The reorder frequency may be changed by selecting the appropriate "+" or "-" hyperlink in the frequency column. The subtotal column 1560 provides the subtotal (the quantity times the unit price) for

each item. The estimated arrival column 1570 shows the next estimated date of arrival of each item. Each item is shipped soon after it is initially added to the monthly list. Thereafter, the shipping date is determined by the reorder frequency indicated in the frequency column 1550.

5 The monthly list also includes information 1575 regarding the total purchase amount for the entire list. A hyperlink 1580 is included to change shipping and billing information. Another hyperlink 1585 is included to save the monthly list. Another hyperlink 1590 is included to add items to the monthly list. By selecting this hyperlink, a user is returned to the web site's main page, where the user may shop for
10 more items by browsing or searching. When a user selects a specific product, however, a user is prompted to add the product to the monthly list, instead of to the shopping basket (see Fig. 4E).

To distinguish between a user who is selecting items for a monthly list and a user who is selecting items for a shopping basket, the web site must maintain the state
15 of a user session. A session can be defined as the series of steps or pages a user navigates while visiting a specific web site. Sites that require a user to log in, execute an ordered series of steps, and submit the transaction all revolve around the concept of a session.

Although the Web is based on the HTTP protocol, which is stateless, state may
20 be maintained throughout a session using various techniques. State may be maintained, for example, through the use of cookies. A disadvantage in using cookies, however, is the widespread public concern that cookies are an invasion of privacy because cookies are stored on a user's computer system and are readily available to any web site. Thus, it is possible for a web site to know the other web
25 sites that a user has visited. Although users may choose not to accept cookies, rejecting cookies may cause web sites to become non-functional (i.e., unable to maintain state).

Another technique to maintain state on the Web is through the use of the URL with variables and arguments. In this technique, each web page that is transmitted to a
30 user contains hyperlinks with unique URLs. Each URL is unique to a user in that unique variable and value arguments are appended to a base URL. The base URL is

actually a script or program that processes the appended variable and value arguments. Common Gateway Interface (CGI) programs are designed in such a manner. Special delimiters, such as a question mark, provide an indication as to the separation between the base URL and the appended variables and values. The web server removes the
5 appended variables and values and then transmits them to the program or script indicated in the base URL.

Instead of CGI programs or scripts, Microsoft's Active Server Pages (ASP) technology may be used. ASP is similar in concept to CGI programs, but provides more efficient use of computer resources than CGI programs. It should be noted that
10 ASP involves dynamic content. That is, the URLs are generated dynamically by the ASP server, which communicates with the web server. The dynamic content is extracted from a database, while template HTML files, image files and the like are stored as static documents. The resulting dynamic page is generated from these pieces and returned to the user.

15 When a user is finished editing the user's monthly list, the user selects a completion hyperlink 1595, labeled "Send Next Monthly Order." (For first time users of monthly lists, the completion hyperlink 1595 may be labeled "Send First Monthly Order.") This completion hyperlink 1595 causes the system to process the items that have been added or that are due for delivery in a similar manner to the check-out
20 process that was described with respect to Fig. 7. In the case of a monthly list, however, a user is not asked to enter shipping and billing information each time an order is processed; a user simply enters such information when the monthly list is first created (unless the user chooses to resubmit billing information over the telephone to a customer service representative each time an order is scheduled to be shipped).

25 Advantageously, according to the present invention, the web site also includes an email notification system. The email notification system works in conjunction with the customer account database stored in the database server. There are several email notifications that a customer can receive. An email notice may be sent immediately to a customer after an order has been successfully submitted for payment
30 processing, thanking the customer for the order. A second email may be sent to the customer the following day, after the web site has received an order fulfillment

summary from the order fulfillment center for the batches submitted on the previous day. This second email notifies the customer whether the order was successfully processed or whether any items were canceled due to problems with order fulfillment (such as inventory discrepancies at the warehouse facilities).

5 Advantageously, a customer who sets up a monthly list also receives a regular email notification a predetermined number of days before an item on the list is scheduled to be received by the customer. For example, a customer may receive an email notification five days before an item is scheduled to be received. Optionally, multiple email notifications may be sent to a customer. For example, an email
10 notification may be sent twice: once ten days before an item is scheduled to be received and again five days before an item is scheduled to be received.

 The email notification contains a unique embedded identifier that allows a customer to reorder the products on the regular list without going through the normal processes associated with ordering a product. The identifier is unique in that it
15 uniquely identifies the customer and is associated with the customer's monthly list.

 The embedded identifier may be, for example, a hyperlink embedded in the email notification containing a unique URL that automatically logs a customer into the system and places the customer directly at the customer's monthly list page. This enables a customer to return to the web site instantaneously to confirm the order,
20 without going through a logging in and selection process.

 Figs. 16A and 16B provide examples of email notifications with unique hyperlinks embedded in them. In Fig. 16A, an email notification 1600a is shown as viewed with an email reader that does not support HTML text. The email notification 1600a contains the URL of a hyperlink 1610. The hyperlink 1610 contains a base
25 address and appended arguments. The base address is "http://www.mybasics.com/mybasics/frame.asp," which refers to an ASP server. The base address is separated from the appended arguments by a question mark. The appended arguments are further delimited by the ampersand. Together, the appended arguments uniquely identify the customer and the customer's monthly list page. To
30 use the URL, a customer may copy the URL into his or web browser.

Fig. 16B shows an email notification 1600b as viewed with an email reader that supports HTML text. In this case, the hyperlink 1620 is not displayed as a URL, but is displayed instead as the label "<<CLICK HERE>>". To use the hyperlink 1620, a customer would simply need to click on the hyperlink with a mouse pointer.

- 5 Of course, the email notification 1600b contains a URL similar to the URL of the email notification 1600a, but because of the sophistication of the email reader, the customer does not need to be bothered with the actual URL; the customer sees only a label associated with the URL.

Unique identifiers may be embedded in email notification in other ways. For
10 example, the identifiers may also be part of an HTML page that is attached to the email. The HTML page may contain information regarding the customer's monthly list, and the hyperlinks on the HTML page may be unique URLs that allow a customer to automatically login prior to performing a specified action associated with the hyperlinks, such as confirming the next order. In each of the cases described above, a
15 failure to respond to the email by using the embedded identifier indicates that a user does not wish the order to be shipped.

In addition, because most people have a voice mail service at work and/or an answering machine at home, which may be checked more often than their email, it may be desirable to leave a voice message with one of these services to alert a user
20 that an email notification has been sent.

The timing of the email notification is critical. On the one hand, if a customer does not believe that it is time to reorder when an email is received, the email may be ignored, in which case there is no further notification until the following cycle. On the other hand, if an email arrives too late, a customer may have gone to a physical
25 store to replenish the needed items. Accordingly, it is greatly advantageous to assist a customer in setting up an accurate reorder frequency for each item.

When a customer first creates a reorder list, the customer may not be knowledgeable about his or her consumption patterns and, thus, may not be able to provide an accurate reorder frequency. Although a simple default reorder frequency
30 may be used (for example, one month) for all items that the customer does not explicitly provide a value for, it is preferred to provide average household

consumption statistics on an item-by-item basis for each item for which the customer does not explicitly provide a value. Such statistics may be licensed, for example, from the ACNielson company of Stamford, Connecticut. Consumption statistics are available at the national, regional, and local levels, as well as by other demographics.

- 5 Preferably, to best assist the customer in setting up a reorder frequency for each item, the consumption statistics used for each item are refined by using any pertinent demographic data available from a customer's account (e.g., the customer's geographic location, sex, age, etc.).

- 10 Once a customer begins ordering from the web site regularly, individual profiling becomes possible to better assist the customer in setting up accurate reorder frequencies. Therefore, the web site preferably profiles the consumption of users and feeds that information into a replenishment expert system. The replenishment expert system then is able to help a user refine the replenishment cycle of products on an itemized basis.

- 15 Additionally, each user may be classified within a common profile group, and the group's usage statistics may be used as a starting point for a new user that is classified within the same group. Thus, as more consumers utilize the web site service, initial product replenishment cycles may also be based on users with similar profiles. The usage patterns of the similar users who utilize the web site may be more accurate than general consumption statistics for average households.

- 20 The level of interaction between a user and the replenishment expert system may be varied. A user may wish the replenishment expert system to simply suggest new replenishment cycles as time goes on, or a user may wish the replenishment expert system to automatically control the email notification system. In each case, the replenishment expert system and email notification system establish a closed feedback loop, in which each continually drives the other to become more accurate.

- 25 The replenishment expert system may also be used with customers who enter single orders. The products in a single order are no different from those in a monthly list, in that there may be average consumption statistics available for them. Thus, an email notification may be sent to a single-order user. The timeliness of this email notification is, of course, very important. If a customer receives such a notification at

just the point in time when an item purchased is running low, the customer may be impressed by the timeliness of the notification and may become a regular user of the virtual store.

Preferably, the email notifications are controlled by a scheduling utility
5 provided by the operating system running on the servers. Operating systems typically provide such scheduling utilities. For example, under the Unix operating system, the "cron" utility allows a programmer to specify in a control file the times and dates a program should be executed. In a server configuration with servers running the Microsoft Site Server software and the Windows NT 4.0 operating system, the server
10 software defines a "pipeline" model through which the workflow, interconnection, communication, and execution time of software modules are specified.

The order status and reorder notification emails are preferably scheduled with such a scheduling utility. For the order status email, the scheduling utility may be configured to launch a program that looks for the order fulfillment summary file once
15 a day (at a time when it is expected to have arrived). This program then reads the order fulfillment summary file and sends a status email (through the email server) to each customer who placed an order listed in the order fulfillment file.

For the reorder notification email, the scheduling utility launches another program each day that queries the customer database. The program queries the
20 database for all customers who have a monthly list and are due for notification. Customers will be due for notification a predefined number of days before an item in their monthly list is scheduled to be received (for example, five days). If a customer is due for notification, the customer's email address is retrieved from the customer's account, and an email reminder is constructed for that customer. As previously
25 described, the email contains an embedded mechanism, such as a unique hypertext link, which allows the customer to return directly to his or her own monthly list page to confirm (and possibly edit) his or her order. If statistical and/or profiling is used to predict reorder frequency, each time a customer confirms and/or edits his or her monthly list, the replenishment expert system tracks this information to better estimate
30 the customer's true replenishment needs.

A similar program is also launched daily for those customers who have placed an order but do not have a monthly list. This program is scheduled to run daily and queries the database for customers who do not have a monthly list, have placed an order a predefined number of days previously (for example, twenty-five days previously), and have not received an email notification for the same order in the past. The purpose of this email is to impress the customer by the timeliness of the reminder and to entice the customer into creating a monthly list, rather than making single orders.

Advantageously, a web site according to the present invention provides an easy, convenient, and accurate way for customers to replenish products that they order on a regular basis. Although the present invention has been described with reference to certain preferred embodiments, various modifications, alterations, and substitutions will be known or obvious to those skilled in the art without departing from the spirit and scope of the invention, as defined by the appended claims.

CLAIMS

1. A method for processing orders for products through a network coupled to at least a first computer system and a second computer system, said first computer system having stored therein a database of products and a database of customers, said second computer system having associated therewith an electronic address associated with a customer in said database of customers, said method comprising:
 - receiving at said first computer system a selection of one or more products from said database of products from said customer;
 - 10 storing data in said first computer system indicating a reorder list for said customer responsive to said selection of one or more products;
 - storing data in said first computer system indicating a reorder frequency for each of said one or more products in said reorder list; and
 - transmitting an electronic notification over said network regarding at least one item in said reorder list responsive to the reorder frequency data associated with said at least one item, said electronic notification being transmitted from said first computer system to said second computer system using said electronic address of said customer, said electronic notification comprising a reorder identifier uniquely associated with said customer and said reorder list.
- 20 2. The method of claim 1, further comprising the step of receiving a communication at said first computer system from said customer comprising said reorder identifier to identify to said first computer system that said communication is in regard to said customer and said reorder list.
3. The method of claim 1, wherein said network is the Internet.
- 25 4. The method of claim 1, wherein said electronic address is an email address.

5. The method of claim 1, wherein said electronic notification is transmitted from said first computer system to said second computer system using the SMTP protocol.

6. The method of claim 1, wherein said reorder identifier is a URL comprising a base address and one or more appended arguments.

7. The method of claim 6, wherein said base address corresponds to a CGI script.

8. The method of claim 6, wherein said base address corresponds to an ASP server.

9. The method of claim 6, wherein said URL is included in an HTML page attached to said electronic notification.

10. The method of claim 1, wherein said reorder identifier is uniquely associated with said electronic notification.

11. The method of claim 1, wherein said reorder identifier is associated with a web page comprising information relating to said reorder list.

12. The method of claim 1, further comprising the step of receiving at said first computer system data from said customer indicating a reorder frequency for each of said one or more products in said reorder list.

13. The method of claim 1, wherein said step of storing data indicating a reorder frequency comprises assigning a reorder frequency to at least one item in said reorder list based on consumption statistics for said at least one item.

14. The method of claim 13, wherein said consumption statistics is the average consumption of said at least one item by a group of people.
15. The method of claim 13, wherein said consumption statistics is based on the demographic characteristics of said customer.
- 5 16. The method of claim 1, wherein said step of storing data indicating a reorder frequency comprises assigning a reorder frequency to at least one item in said reorder list based on the past history of purchases of said customer.
- 10 17. The method of claim 1, wherein said step of storing data indicating a reorder frequency comprises assigning a reorder frequency to at least one item in said reorder list based on the past history of purchases of customers in said database of customers having similar profiles to said customer.
18. The method of claim 17, wherein said similar profiles are based on demographic characteristics.
- 15 19. The method of claim 1, further comprising the step of storing a voice message on a voice mail service of said customer, notifying said customer that said electronic notification has been transmitted.
20. The method of claim 1, further comprising the step of storing a voice message on an answering machine of said customer, notifying said customer that said electronic notification has been transmitted.
- 20 21. The method of claim 1, wherein said database of customers includes a customer identifier and a customer password associated with said customer, and further comprising the steps of:
- receiving a communication by said first computer system over said network of said customer identifier and said customer password of said customer;

receiving an additional selection of one or more products from said database of products from said customer;

storing data in said first computer system indicating a shopping basket for said customer responsive to said additional selection of one or more products; and

5 transferring at least one item from said shopping basket to said reorder list.

22. A data processing system for processing orders for products over a network coupled to at least one computer system, said data processing system comprising:

10 a memory storage unit having stored therein a database of products and a database of customers, a customer in said database of customers having associated therewith an electronic address associated with said at least one computer system;

means for receiving a selection of one or more products from said database of products from said customer;

15 means for storing in said memory storage unit data indicating a reorder list for said customer responsive to said selection of one or more products;

means for storing in said memory storage unit data indicating a reorder frequency for each of said one or more products in said reorder list; and

means for transmitting from said data processing system to said at least
20 one computer system an electronic notification over said network regarding at least one item in said reorder list responsive to the reorder frequency data associated with said at least one item, said means for transmitting using said electronic address of said customer, said electronic notification comprising a reorder identifier uniquely associated with said customer and said reorder list.

25 23. The data processing system of claim 22, further comprising means for receiving a communication from said customer comprising said reorder identifier.

24. The data processing system of claim 22, wherein said network is the Internet.

25. The data processing system of claim 22, wherein said electronic address is an email address.

26. The data processing system of claim 22, wherein said means for transmitting utilizes the SMTP protocol.

5 27. The data processing system of claim 22, wherein said reorder identifier is a URL comprising a base address and one or more appended arguments.

28. The data processing system of claim 27, wherein said base address corresponds to a CGI script.

10 29. The data processing system of claim 27, wherein said base address corresponds to an ASP server.

30. The data processing system of claim 27, wherein said URL is included in an HTML page attached to said electronic notification.

31. The data processing system of claim 22, wherein said reorder identifier is uniquely associated with said electronic notification.

15 32. The data processing system of claim 22, wherein said reorder identifier is associated with a web page comprising information relating to said reorder list.

33. The data processing system of claim 22, further comprising means for receiving data from said customer indicating a reorder frequency for each of said one or more products in said reorder list.

20 34. The data processing system of claim 22, wherein said means for storing data indicating a reorder frequency comprises means for assigning a reorder frequency

to at least one item in said reorder list based on consumption statistics for said at least one item.

35. The data processing system of claim 34, wherein said consumption statistics is the average consumption of said at least one item by a group of people.

5 36. The data processing system of claim 34, wherein said consumption statistics is based on the demographic characteristics of said customer.

37. The data processing system of claim 22, wherein said means for storing data indicating a reorder frequency comprises assigning a reorder frequency to at least one item in said reorder list based on the past history of purchases of said customer.

10 38. The data processing system of claim 22, wherein said means for storing data indicating a reorder frequency comprises assigning a reorder frequency to at least one item in said reorder list based on the past history of purchases of customers in said database of customers having similar profiles to said customer.

15 39. The data processing system of claim 38, wherein said similar profiles are based on demographic characteristics.

40. The data processing system of claim 22, further comprising means for storing a voice message on a voice mail service of said customer, notifying said customer that said electronic notification has been transmitted.

20 41. The data processing system of claim 22, further comprising means for storing a voice message on an answering machine of said customer, notifying said customer that said electronic notification has been transmitted.

42. The data processing system of claim 22, wherein said database of customers includes a customer identifier and a customer password associated with

said customer, and further comprising:

means for receiving a communication by said data processing system over said network of said customer identifier and said customer password of said customer;

5 means for receiving an additional selection of one or more products from said database of products from said customer;

means for storing data in said memory storage unit indicating a shopping basket for said customer responsive to said additional selection of one or more products; and

10 means for transferring at least one item from said shopping basket to said reorder list.

43. A system for ordering products over a network, comprising:

a first computer system coupled to said network, said first computer system having stored therein a database of products and a database of customers;

15 a second computer system coupled to said network, said second computer system having associated therewith an electronic address associated with a customer in said database of customers;

means for selecting one or more products from said database of products by said customer to establish a reorder list;

20 means for associating a reorder frequency with each of said one or more products in said reorder list;

means for storing each of said one or more products and its associated reorder frequency on said first computer system; and

25 means for transmitting from said first computer system to said second computer system an electronic notification regarding at least one item in said reorder list based on the reorder frequency associated with said at least one item, said means for transmitting using said electronic address of said customer, said electronic notification comprising a reorder identifier uniquely associated with said customer and said reorder list.

44. The system of claim 43, further comprising means for communicating with said first computer system using said reorder identifier to identify said customer to said first computer system.

45. The system of claim 43, wherein said network is the Internet.

5 46. The system of claim 43, wherein said electronic address is an email address.

47. The system of claim 43, wherein said means for transmitting utilizes the SMTP protocol.

10 48. The system of claim 43, wherein said reorder identifier is a URL comprising a base address and one or more appended arguments.

49. The system of claim 48, wherein said base address corresponds to a CGI script.

50. The system of claim 48, wherein said base address corresponds to an ASP server.

15 51. The system of claim 48, wherein said URL is included in an HTML page attached to said electronic notification.

52. The system of claim 43, wherein said reorder identifier is uniquely associated with said electronic notification.

20 53. The system of claim 43, wherein said reorder identifier is associated with a web page comprising information relating to said reorder list.

54. The system of claim 43, further comprising means for receiving data from said customer indicating a reorder frequency for each of said one or more products in said reorder list.

55. The system of claim 43, wherein said means for associating a reorder frequency comprises means for assigning a reorder frequency to at least one item in said reorder list based on consumption statistics for said at least one item.

56. The system of claim 55, wherein said consumption statistics is the average consumption of said at least one item by a group of people.

57. The system of claim 55, wherein said consumption statistics is based on the demographic characteristics of said customer.

58. The system of claim 43, wherein said means for associating a reorder frequency comprises assigning a reorder frequency to at least one item in said reorder list based on the past history of purchases of said customer.

59. The system of claim 43, wherein said means for associating a reorder frequency comprises assigning a reorder frequency to at least one item in said reorder list based on the past history of purchases of customers in said database of customers having similar profiles to said customer.

60. The system of claim 59, wherein said similar profiles are based on demographic characteristics.

61. The system of claim 43, further comprising means for storing a voice message on a voice mail service of said customer, notifying said customer that said electronic notification has been transmitted.

62. The system of claim 43, further comprising means for storing a voice message on an answering machine of said customer, notifying said customer that said electronic notification has been transmitted.

63. The system of claim 43, wherein said database of customers includes a customer identifier and a customer password associated with said customer, and further comprising:

means for receiving a communication by said first computer system over said network of said customer identifier and said customer password of said customer;

10 means for receiving an additional selection of one or more products from said database of products from said customer;

means for storing data in said first computer system indicating a shopping basket for said customer responsive to said additional selection of one or more products; and

15 means for transferring at least one item from said shopping basket to said reorder list.

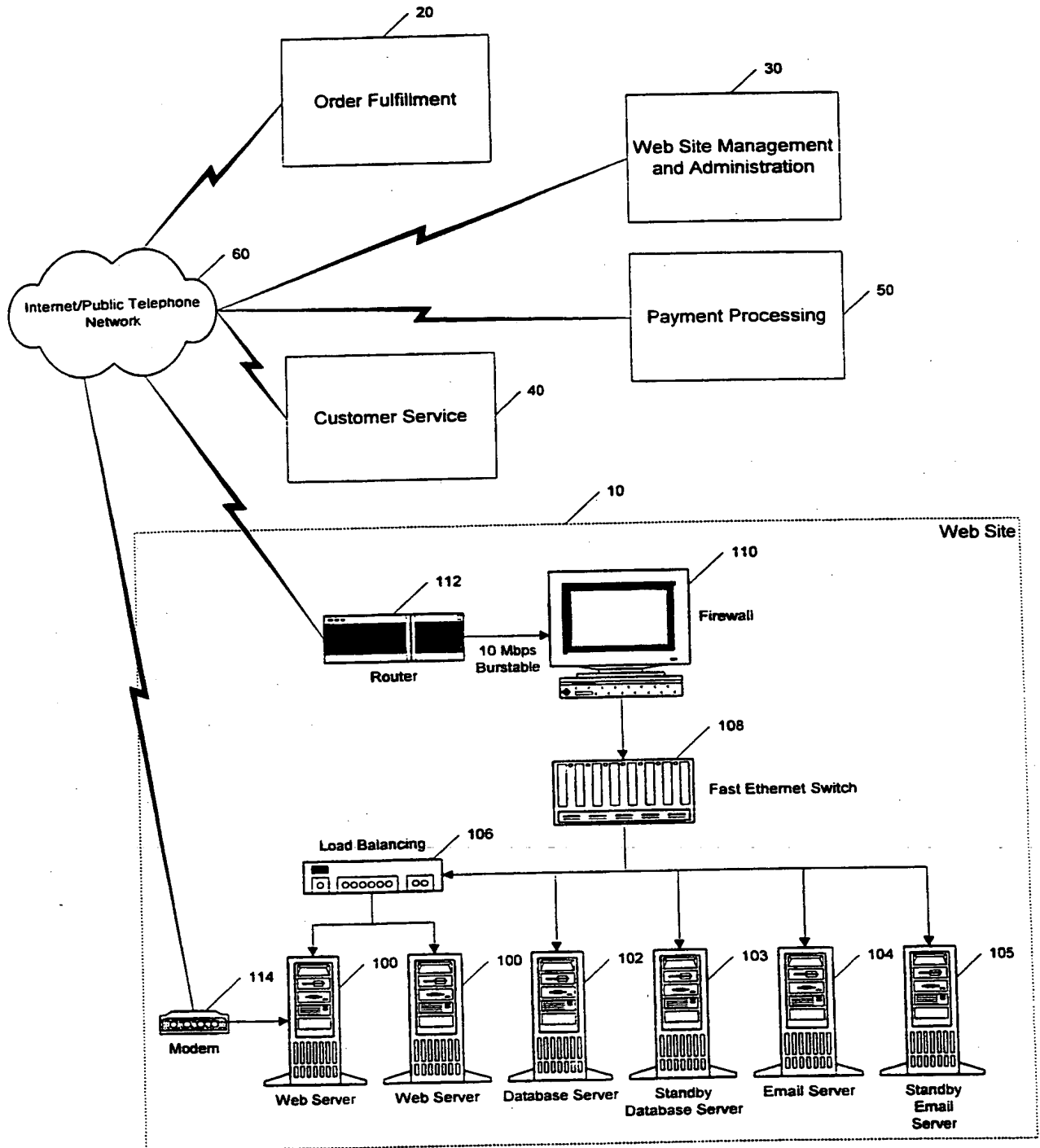
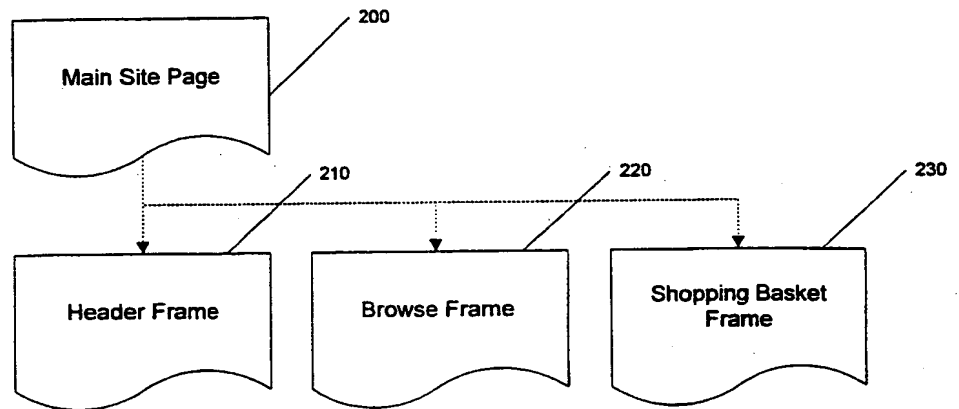


Fig. 1

**Fig. 2**

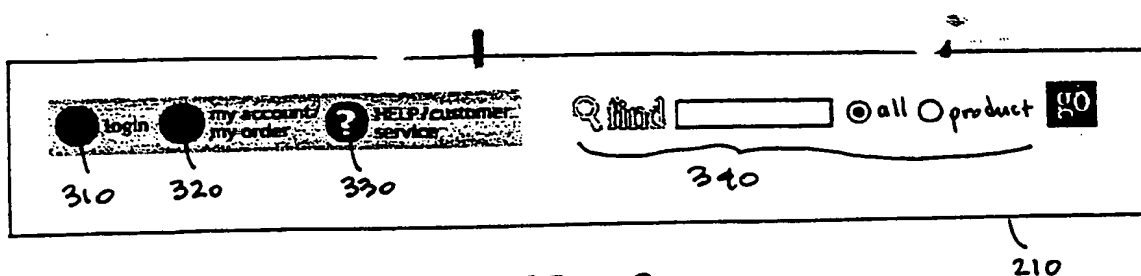


FIG. 3

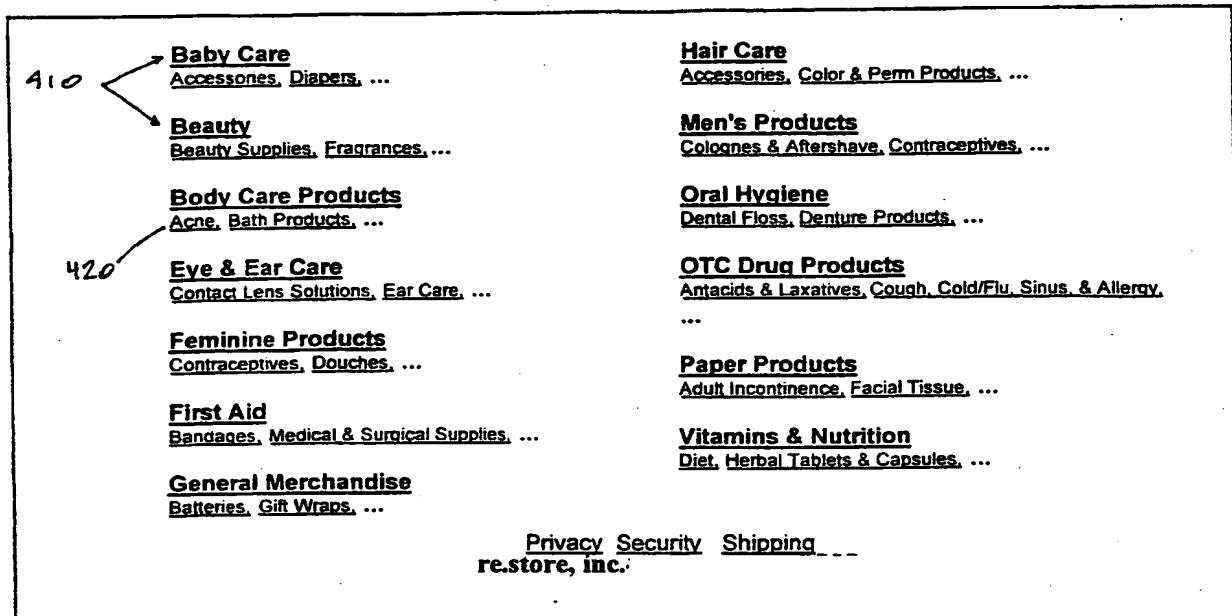


FIG. 4A

220

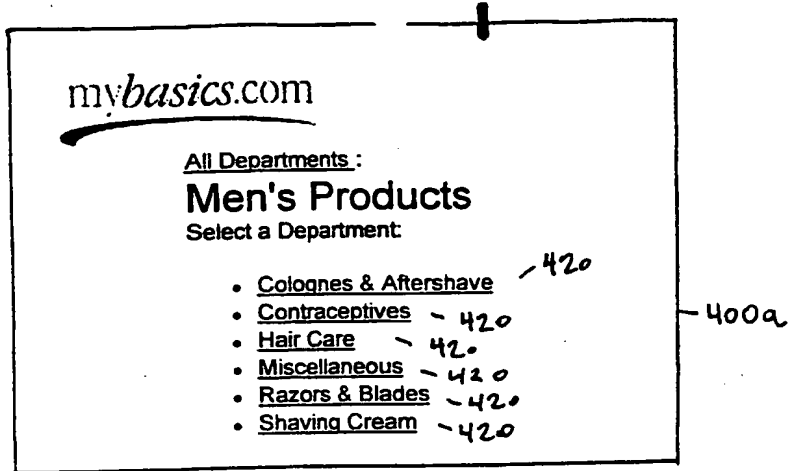



FIG. 4B

mybasics.comMen's Products**Razors & Blades**



There are 101 products in this category

Page of 6

Select a Product

Product Description	Size	Price
Product X	10 ct.	\$9.44
Product Y	7 oz.	\$2.10
Product Z	2 Case	\$14.36 **

** Out of Stock

 previous 20 matches next 20 matches 

4006

FIG. 4C

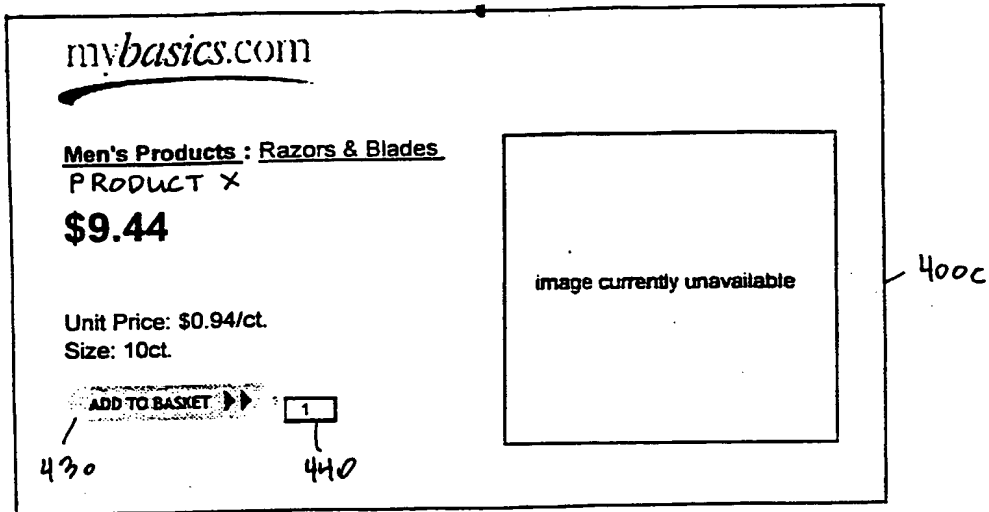


FIG. 4D

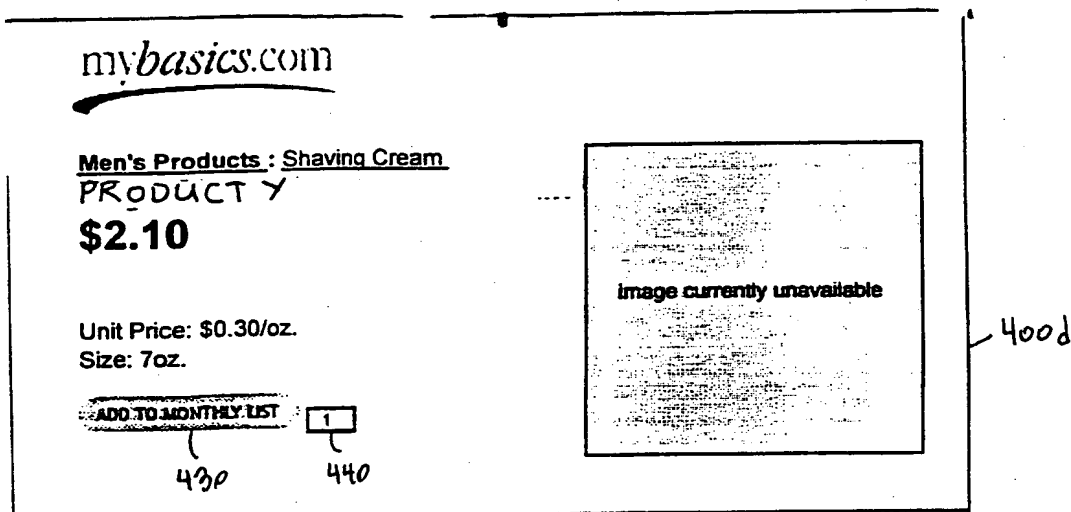


FIG. 4E

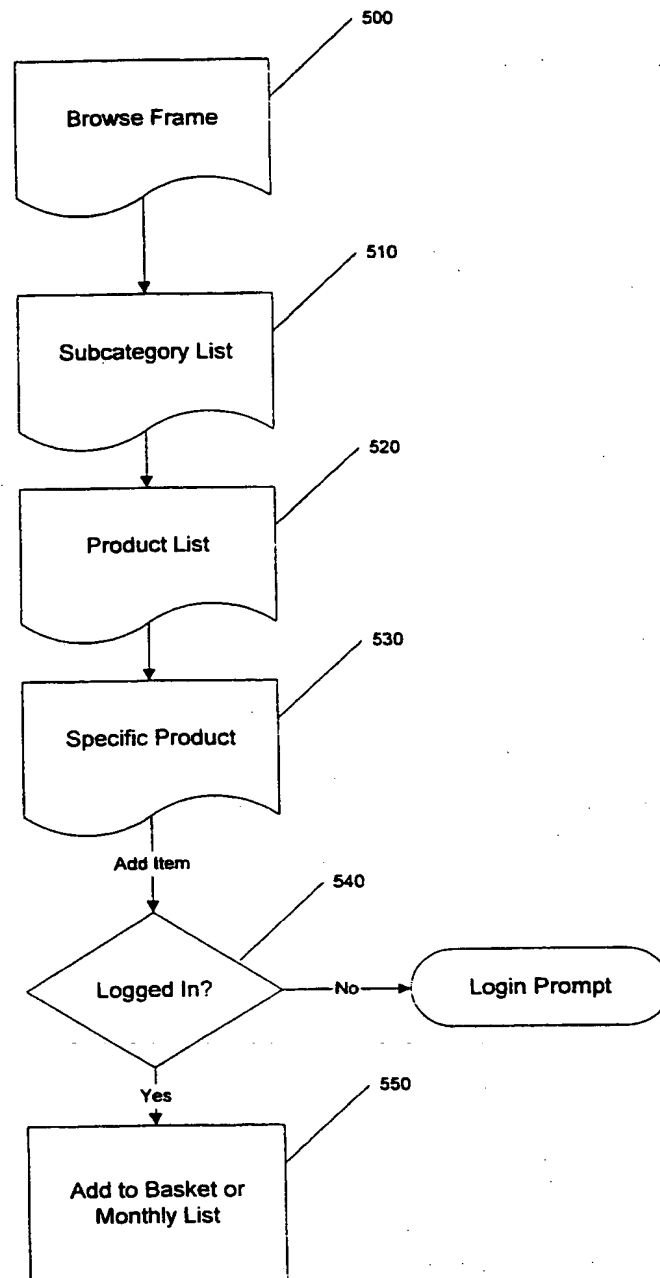


FIG. 5

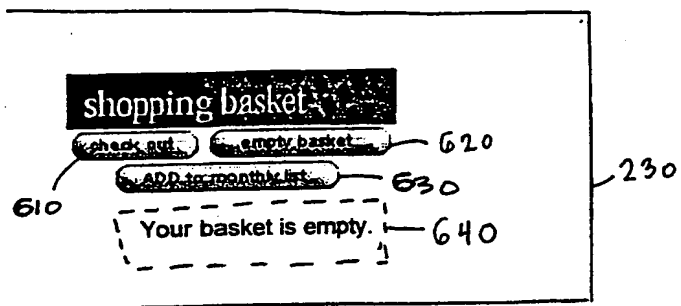


FIG. 6A

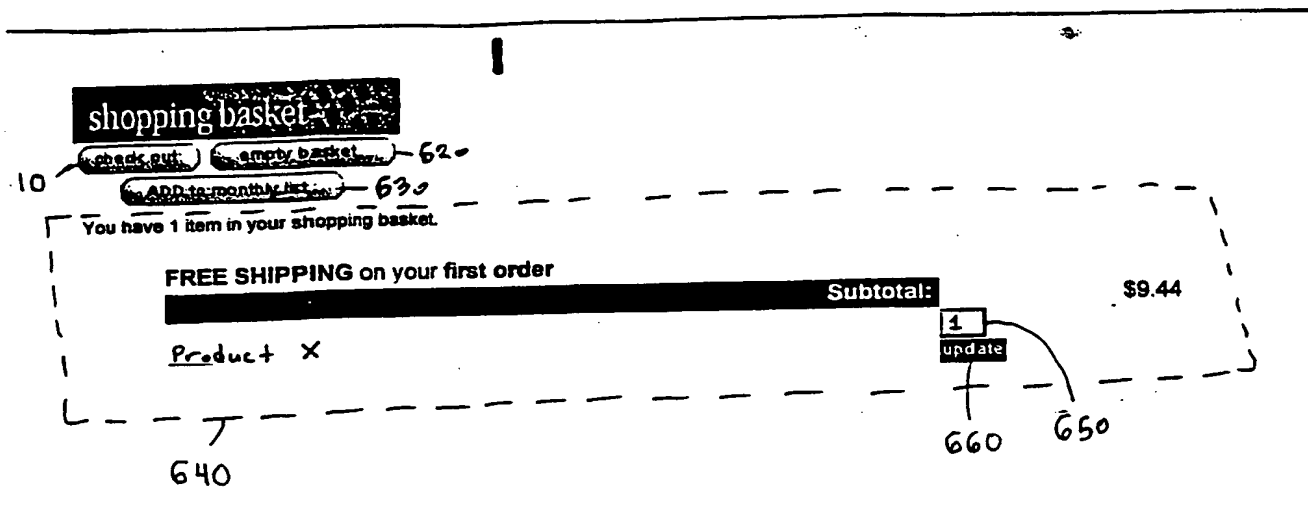
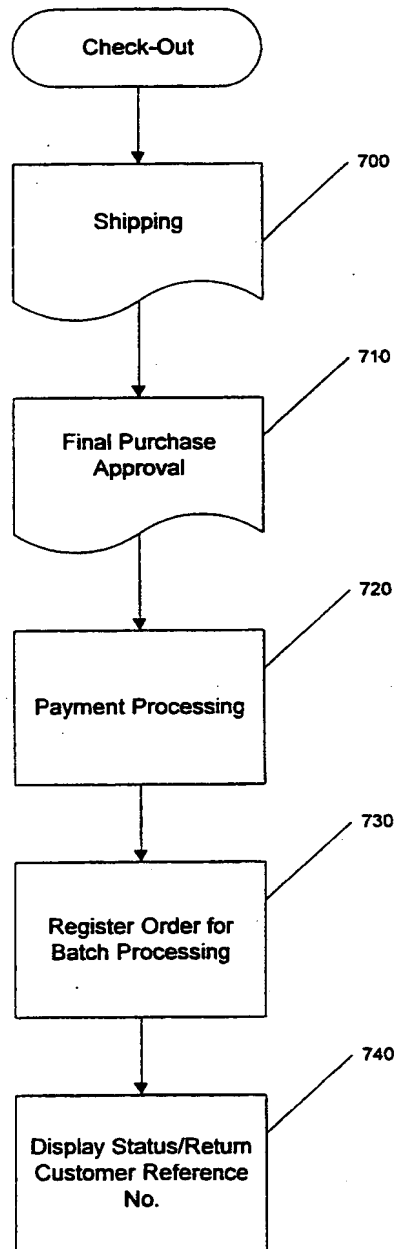


Fig. 6B

**FIG. 7**

mybasics.com **Shipping**

If you need to change any items, please go to the shopping basket to correct them.

If the order is correct, then please fill out the shipping instructions below and press the "Total" button. This will show you what your total cost (including tax and shipping) will be. If the total is satisfactory, then you'll be able to complete the purchase.

Partial shipments

☒ Check this box to accept partial shipments — if an item is unavailable the remainder of your order will be sent anyway. } 805

Shipping Method } 810
UPS Ground Tracking

Shipping Address

Name: 820

Street:

City: } 830

State Code:

ZIP Code:

Phone: 840

TOTAL

850

800a

FIG. 8A

mybasics.com Final Purchase Approval

Your purchase will cost **\$10.12**. Please enter your payment information and press the "Purchase" button below.

Subtotal: \$9.48
Shipping: \$0.00
Tax: \$0.64
TOTAL: \$10.12

860

Credit Card Information

Enter or change your payment information. Changing payment information acts upon this order as well as all scheduled orders.

Name on Card:
Card Number:
Type:
Expiration Date:

870

Billing Address

Name:
Street:
City:
State:
ZIP Code:
Phone:

880

890

8006

FIG. 8B

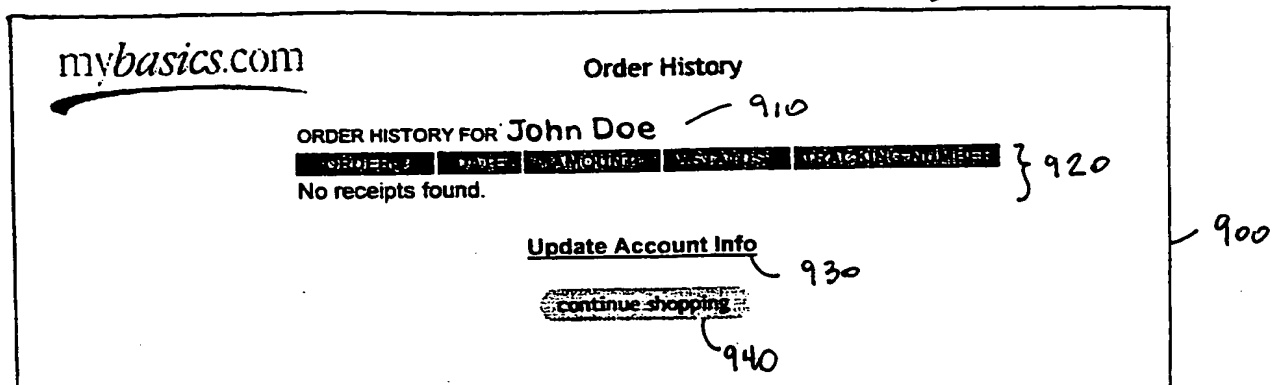


FIG. 9

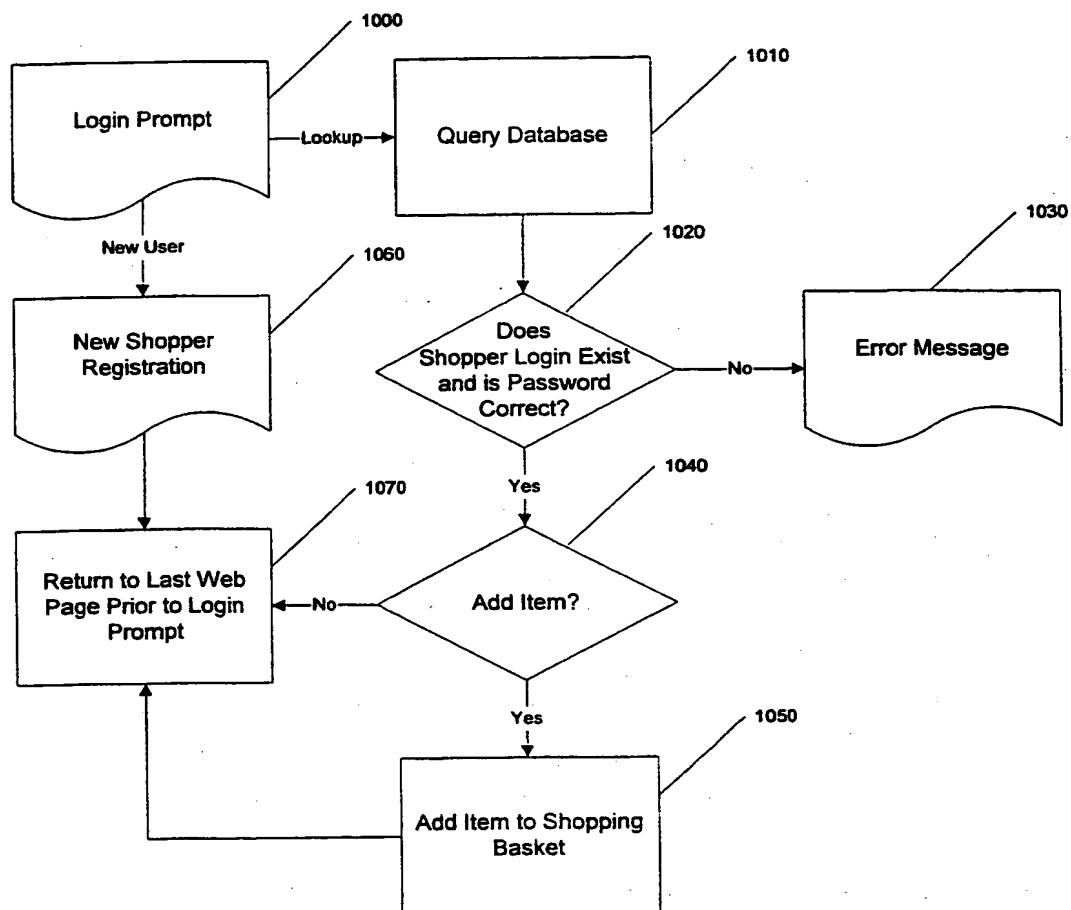
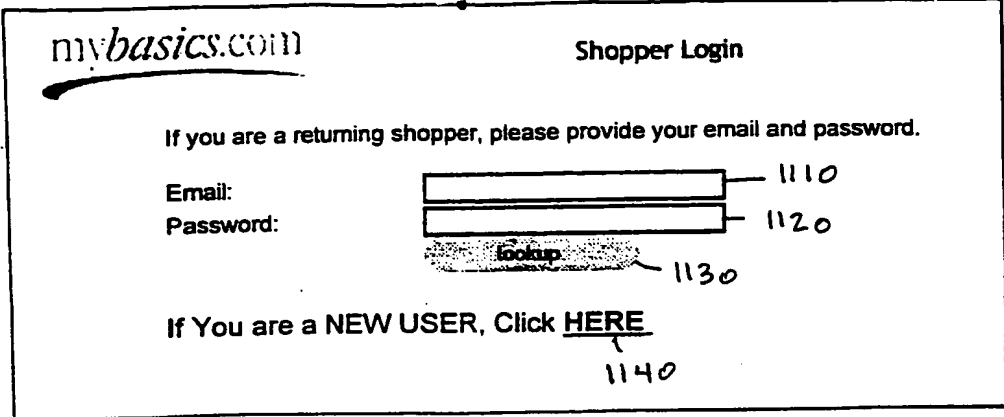


FIG. 10



mybasics.com

Shopper Login

If you are a returning shopper, please provide your email and password.

Email: 1110

Password: 1120

1130

If You are a NEW USER, Click HERE 1140

1100

FIG. 11

mybasics.com New Shopper

Please enter the following information

Name: 1210

Email: 1220

Password: 1230

Password again: 1230

Street: 1240

City: 1240

State: AL 1240

ZIP Code: 1240

Phone: 1250

1260

FIELD LABELS IN BOLD INDICATE REQUIRED FIELDS

FIG. 12

mybasics.com

Monthly List: Shipping

Please fill out the shipping information for your monthly order. Once you are done, press the "Proceed to Next Step" button to move on to your billing information page.

Partial shipments

☒ Check this box to accept partial shipments — if an item is unavailable the remainder of your order will be sent anyway.

Shipping Method

Shipping Address

Name:

Street:

City:

State Code:

ZIP Code:

Phone:

proceed to next step

1300a

FIG. 13A

mybasics.com

Monthly List: Payment

Please update your payment information below and press the "Done" button to finish entering shipping and billing information for your monthly order. However you will be billed only when an order is shipped to you.

Credit Card Information

Enter or change your payment information. Changing payment information acts upon this order as well as all scheduled orders.

Name on Card:

Card Number:

Type:

Expiration Date:

Billing Address

Name:

Street:

City:

State:

ZIP Code:

Phone:

done

13006

FIG. 13B

mybasics.com

Monthly List: Schedule

1410

Add basket to my monthly list
Adding your current basket to your monthly list causes the items in your basket to be added to your existing monthly list. You may then fine tune the frequency of delivery of each item. When you are finished the items in your current basket will be shipped to you, while your monthly list will be used to remind you when it's time to reorder.

1420

Replace monthly list with basket
Replace monthly list with basket: This causes your existing monthly list to be replaced with the current shopping basket. Note that the items in your existing monthly list will no longer be scheduled! When you are finished, your current basket will be shipped to you, and your monthly list will be identical to your current basket. The monthly list will be used to remind you

1430

Edit current monthly list without changes
Edit current monthly list without changes: You may edit your existing monthly list separately from your current shopping basket. When editing is complete, you will need to log in again to retrieve your current shopping basket and continue shopping. Choosing this option allows you to move your scheduled next shipment, and fine tune the frequency of delivery for each item in your list.

FIG. 14

22 / 24

mybasics.com

Monthly List

Estimated Arrival date of monthly order shipment: **October 3 1998**

Your current basket is being used to build your monthly order. In approximately one month you will be sent an email reminder for your next monthly shipment.

Future Orders will NOT be shipped unless you respond to a confirmation email sent to you one week before the estimated arrival date of the shipment

Your regular EMAIL reminder provides an easy way to edit your monthly shipment. The email enables you to revisit this site and edit monthly list parameters including shipment dates, items and quantity information. You may continue to ADD to your first order using the button "Add to My Monthly List" below.

Items shown in RED are NOT saved in your monthly list. Click "Save My Monthly List" before leaving this page.

DELETE	ITEM	QUANTITY	UNIT PRICE	FREQUENCY	ITEM SUBTOTAL	EST. ARRIVAL
X	Product X	1	\$9.44	Every 1 Month	\$9.44	10/3/98
X	Product Y	1	\$2.10	Every 1 Month	\$2.10	10/3/98
					Subtotal	
					Estimated Shipping	
					Tax	
					Total	15.54

Change Shipping & Billing - 1580

Save My Monthly List - 1585

Add to Monthly List - 1590

Send Next Monthly Order

1595

1500

FIG. 15

Dear John Doe:

The following items in your monthly list are scheduled to be shipped to you this month:

<u>Product</u>	<u>Estimated Arrival Date</u>
Product X	October 3, 1998
Product Y	October 3, 1998

To automatically return to your monthly list page and confirm the shipment of one or more of these items, please use the following World Wide Web hypertext link:

<http://www.mybasics.com/mybasics/frame.asp?reqpage=shopper%5Flookup%5Fschedorder&Confirm=&new=&edit=&laccess=10%2F13%2F58+21%3A18%3Z902+AM&mscssid=XYADD54EGAMSH2L4517Q>

These products will NOT be shipped to you unless you confirm your order.

1610

1600a

FIG. 16A

Dear John Doe:

The following items in your monthly list are scheduled to be shipped to you this month:

<u>Product</u>	<u>Estimated Arrival Date</u>
Product X	October 3, 1998
Product Y	October 3, 1998

To automatically return to your monthly list page and confirm the shipment of one or more of these items, please <<CLICK HERE>>.

These products will NOT be shipped to you unless you confirm your order.

1620

1600b

FIG. 16B



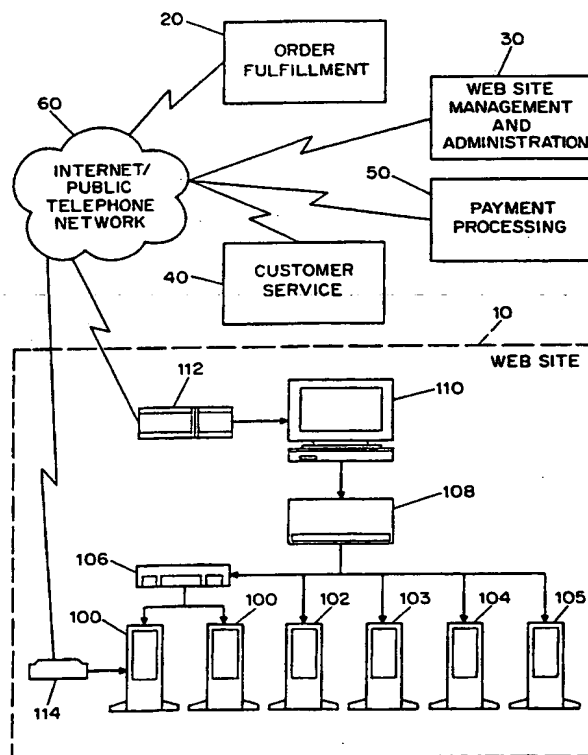
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : G06F 17/60	A3	(11) International Publication Number: WO 00/22560 (43) International Publication Date: 20 April 2000 (20.04.00)
<p>(21) International Application Number: PCT/US99/23590</p> <p>(22) International Filing Date: 12 October 1999 (12.10.99)</p> <p>(30) Priority Data: 09/170,561 13 October 1998 (13.10.98) US</p> <p>(71) Applicant (for all designated States except US): INDULGE.COM [US/US]; 342 Madison Avenue, Suite 710, New York, NY 10173 (US).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): HOLT, George, A., III [US/US]; 17 Hemlock Road, Hartsdale, NY 10530 (US). LI, Lehmann [US/US]; 64 East 80th Street, New York, NY 10021 (US).</p> <p>(74) Agents: MAUNE, James, J. et al.; Baker & Botts, LLP, 30 Rockefeller Plaza, New York, NY 10112-0228 (US).</p>	<p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report.</i></p> <p>(88) Date of publication of the international search report: 13 July 2000 (13.07.00)</p>	

(54) Title: REPLENISHMENT SYSTEM AND METHOD FOR ELECTRONIC COMMERCE

(57) Abstract

There is provided a system and method for processing orders for products through a network coupled to at least a first computer system and a second computer system. The first computer system has stored therein a database of products and a database of customers. The second computer system has associated therewith an electronic address, which is associated with a customer in the database of customers. The first computer system receives a selection of one or more products from the database of products from the customer. The first computer system then stores data indicating a reorder list for the customer responsive to the selection of one or more products. The first computer system also stores data indicating a reorder frequency for each of the one or more products in the reorder list. The first computer system then transmits to the second computer system an electronic notification over the network regarding at least one item in the reorder list responsive to the reorder frequency data associated with that at least one item. The electronic notification is transmitted using the electronic address of the customer. The electronic notification includes a reorder identifier uniquely associated with the customer and the reorder list.



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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/23590

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	MCCLAIN K: "Computer reminder improves compliance. Med-Minder calls patients when their prescriptions need refilling" CHAIN STORE AGE EXECUTIVE, APRIL 1989, USA, vol. 65, no. 4, pages 67-68, XP000901426 ISSN: 0193-1199 page 67, column 1, line 1 - line 52	1-63
Y	WO 97 23838 A (CATALINA MARKETING INT ; SCROGGIE MICHAEL C (US); KACABA MICHAEL E) 3 July 1997 (1997-07-03) page 22, line 1 - page 23, line 16 figure 17	1-63

☒ Further documents are listed in the continuation of box C.

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Date of the actual completion of the international search

4 April 2000

Date of mailing of the international search report

14/04/2000

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INTERNATIONAL SEARCH REPORT

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 98 09209 A (INTERTRUST TECHNOLOGIES CORP) 5 March 1998 (1998-03-05) page 375, line 1 - line 5 page 761, line 14 - line 21 _____	1-63
A	GB 2 315 351 A (FUJITSU LTD) 28 January 1998 (1998-01-28) page 11, line 6 - line 11 page 14, line 8 - line 12 _____	1-63
A	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 11, 30 September 1998 (1998-09-30) & JP 10 162079 A (VICTOR CO OF JAPAN LTD;NIPPON TELEG & TELEPH CORP <NTT>), 19 June 1998 (1998-06-19) abstract _____	1-63

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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JP 10162079	A	19-06-1998	NONE	

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 April 2000 (20.04.2000)

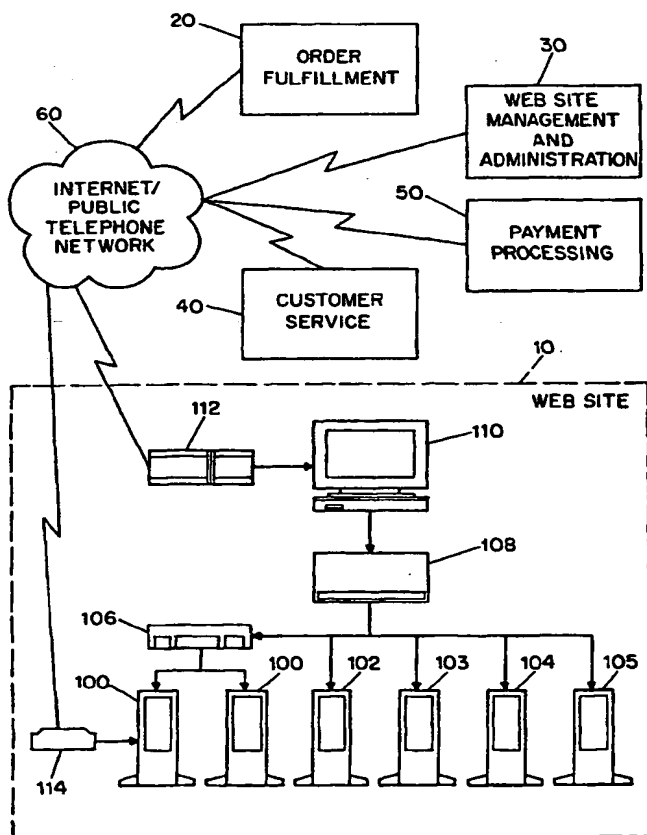
PCT

(10) International Publication Number
WO 00/22560 A3

- (51) International Patent Classification⁷: G06F 17/60
- (21) International Application Number: PCT/US99/23590
- (22) International Filing Date: 12 October 1999 (12.10.1999)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
09/170,561 13 October 1998 (13.10.1998) US
- (71) Applicant (for all designated States except US): INDULGE.COM [US/US]; 15th Floor, 11 East 26th Street, New York, NY 10010 (US).
- (72) Inventors; and
(75) Inventors/Applicants (for US only): HOLT, George, A., III [US/US]; 17 Hemlock Road, Hartsdale, NY 10530 (US). LI, Lehmann [US/US]; 64 East 80th Street, New York, NY 10021 (US).
- (74) Agents: MAUNE, James, J. et al.; Baker & Botts, LLP, 30 Rockefeller Plaza, New York, NY 10112-0228 (US).
- (81) Designated States (national): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

[Continued on next page]

(54) Title: REPLENISHMENT SYSTEM AND METHOD FOR ELECTRONIC COMMERCE



(57) Abstract: There is provided a system and method for processing orders for products through a network coupled to at least a first computer system and a second computer system. The first computer system has stored therein a database of products and a database of customers. The second computer system has associated therewith an electronic address, which is associated with a customer in the database of customers. The first computer system receives a selection of one or more products from the database of products from the customer. The first computer system then stores data indicating a reorder list for the customer responsive to the selection of one or more products. The first computer system also stores data indicating a reorder frequency for each of the one or more products in the reorder list. The first computer system then transmits to the second computer system an electronic notification over the network regarding at least one item in the reorder list responsive to the reorder frequency data associated with that at least one item. The electronic notification is transmitted using the electronic address of the customer. The electronic notification includes a reorder identifier uniquely associated with the customer and the reorder list.

WO 00/22560 A3



(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(48) Date of publication of this corrected version:

5 July 2001

(15) Information about Correction:

see PCT Gazette No. 27/2001 of 5 July 2001, Section II

Published:

— With international search report.

(88) Date of publication of the international search report:
13 July 2000

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REPLENISHMENT SYSTEM AND METHOD FOR ELECTRONIC COMMERCE

SPECIFICATION

BACKGROUND

5 The present invention relates generally to the transaction of commerce on a computer network, such as the Internet. More specifically, the present invention relates to the replenishment of products purchased through a computer network, such as the Internet.

 Electronic commerce (e-commerce) is quickly gaining popularity as an
10 alternative method for selling and purchasing goods and services because e-commerce is able to provide benefits to both the merchant and the customer over traditional business practices. For example, for the merchant, e-commerce may help to reduce the costs and increase the efficiency of inventory management. For the customer, e-commerce may provide better prices and more personalized service.

15 In recent years, an increasingly popular method of conducting e-commerce has been through the World Wide Web (the "Web") with the emergence of web sites specializing in a variety of products. For the purposes of this specification, e-commerce sites on the Web may be split into two categories: those selling consumable goods and those selling non-consumable goods and/or services.

20 Consumable goods are those goods that consumers use up or deplete, such as vitamins, shampoo, and disposable contact lenses, to give just a few examples. Non-consumable goods are those goods that consumers do not use up or deplete (although they may eventually wear out or break down), such as books, music CDs, computers, and automobiles.

25 Because of the nature of the goods it sells, a web site specializing in consumable goods has different user requirements than a web site specializing in non-consumable goods. For example, web sites specializing in consumable goods may attempt to provide some aid for a user to reorder supplies when supplies are expected

to run low. In contrast, such aid is difficult, if not impossible, for non-consumable good suppliers. For example, while a bookstore web site obviously wants to entice a buyer to return to its site in the future, it is difficult to determine when the user should return as well as to suggest what the user should buy.

5 Thus far, the aids provided by the sites specializing in consumable goods have been in the form of historical lists of purchases or reminders based on simple reordering metrics. For example, some sites allow a user to recall a complete purchase history, including dates and description of purchases, which the user may then use to determine his or her needs. Additionally, one site allows a user to recall
10 and reuse a past shopping list, to which additional items may be added and/or existing items may be deleted. Moreover, another site specializing in nutritional supplements provides email reminders to users, reminding them to reorder products. The reminders are based on the daily recommended intake schedules of the actual products sold.

15 The aids provided by existing sites, while somewhat helpful, have disadvantages. With regard to the sites providing historical purchase details, the aid provided is passive in nature and thus requires significant consumer involvement in the reordering process. On these sites, a consumer must spend time recalling his or her historical list and must then analyze the list in some degree to determine his or her
20 current needs. With regard to an email reminder provided on the basis of the daily recommended intake of a product, the reminder may be untimely in many cases. For example, a consumer may not follow the daily recommended intake schedule or a consumer may buy a product for use by more than one person (e.g., for an entire family). In these cases, an email reminder based on daily recommended intake would
25 be useless. Moreover, such an email reminder would not work with consumable products (such as shampoo or soap) that do not have a daily recommended intake schedule. Finally, even if such an email reminder were timely received, a consumer is required to spend time revisiting a site and reprocessing an order each time a product is needed.

30 Accordingly, it is greatly desirable to provide a system and method that actively manages, simplifies, and facilitates the reordering and replenishment of

consumable products.

SUMMARY OF THE INVENTION

According to one aspect of the present invention, there is provided a method for processing orders for products through a network coupled to at least a first
5 computer system and a second computer system. The first computer system has stored therein a database of products and a database of customers. The second computer system has associated therewith an electronic address associated with a customer in the database of customers. The method includes: receiving at the first computer system a selection of one or more products from the database of products
10 from the customer; storing data in the first computer system indicating a reorder list for the customer responsive to the selection of one or more products; storing data in the first computer system indicating a reorder frequency for each of the one or more products in the reorder list; and transmitting an electronic notification over the network regarding at least one item in the reorder list responsive to the reorder
15 frequency data associated with the at least one item. The electronic notification is transmitted from the first computer system to the second computer system using the electronic address of the customer. The electronic notification includes a reorder identifier uniquely associated with the customer and the reorder list.

The method may further include the step of receiving a communication at the
20 first computer system from the customer that includes the reorder identifier to identify to the first computer system that the communication is in regard to the customer and the reorder list.

Preferably, the network is the Internet and the electronic address is an email address. Preferably, the electronic notification is transmitted from the first computer
25 system to the second computer system using the SMTP protocol.

Preferably, the reorder identifier is a URL, which includes a base address and one or more appended arguments. The base address may correspond to a CGI script or to an ASP server. The reorder identifier may also be a URL that is included in an HTML page attached to the electronic notification.

Preferably, the reorder identifier is uniquely associated with the electronic notification.

Preferably, the reorder identifier is associated with a web page that includes information relating to the reorder list.

5 The method may further include the step of receiving at the first computer system data from the customer indicating a reorder frequency for each of the one or more products in the reorder list.

10 The step of storing data indicating a reorder frequency may comprise assigning a reorder frequency to at least one item in the reorder list based on consumption statistics for the at least one item. The consumption statistics may be the average consumption of the at least one item by a group of people. In addition, the consumption statistics may be based on the demographic characteristics of the customer.

15 The step of storing data indicating a reorder frequency may comprise assigning a reorder frequency to at least one item in the reorder list based on the past history of purchases of the customer. In addition, the step of storing data indicating a reorder frequency may comprise assigning a reorder frequency to at least one item in the reorder list based on the past history of purchases of customers in the database of customers having similar profiles to the customer. The similar profiles may be based
20 on demographic characteristics.

25 The method may further include the step of storing a voice message on a voice mail service of the customer, notifying the customer that the electronic notification has been transmitted. Additionally, the method may include the step of storing a voice message on an answering machine of the customer, notifying the customer that the electronic notification has been transmitted.

30 Preferably, the database of customers includes a customer identifier and a customer password associated with the customer, and the method further includes the steps of: receiving a communication by the first computer system over the network of the customer identifier and the customer password of the customer; receiving an additional selection of one or more products from the database of products from the customer; storing data in the first computer system indicating a shopping basket for

the customer responsive to the additional selection of one or more products; and transferring at least one item from the shopping basket to the reorder list.

In another aspect of the present invention, there is provided a data processing system for processing orders for products over a network coupled to at least one
5 computer system. The data processing system includes: a memory storage unit has stored therein a database of products and a database of customers, a customer in the database of customers has associated therewith an electronic address associated with the at least one computer system; means for receiving a selection of one or more products from the database of products from the customer; means for storing in the
10 memory storage unit data indicating a reorder list for the customer responsive to the selection of one or more products; means for storing in the memory storage unit data indicating a reorder frequency for each of the one or more products in the reorder list; and means for transmitting from the data processing system to the at least one computer system an electronic notification over the network regarding at least one
15 item in the reorder list responsive to the reorder frequency data associated with the at least one item. The means for transmitting uses the electronic address of the customer. The electronic notification includes a reorder identifier uniquely associated with the customer and the reorder list.

In yet another aspect of the present invention, there is provided a system for
20 ordering products over a network, which includes: a first computer system coupled to the network, the first computer system having stored therein a database of products and a database of customers; a second computer system coupled to the network, the second computer system having associated therewith an electronic address associated with a customer in the database of customers; means for selecting one or more
25 products from the database of products by the customer to establish a reorder list; means for associating a reorder frequency with each of the one or more products in the reorder list; means for storing each of the one or more products and its associated reorder frequency on the first computer system; and means for transmitting from the first computer system to the second computer system an electronic notification
30 regarding at least one item in the reorder list based on the reorder frequency associated with the at least one item. The means for transmitting uses the electronic address of

the customer. The electronic notification includes a reorder identifier uniquely associated with the customer and the reorder list.

BRIEF DESCRIPTION OF THE DRAWINGS

Exemplary embodiments of the present invention will now be described in detail with reference to the accompanying drawings in which:

Fig. 1 is a functional block diagram of a virtual store according to a preferred embodiment of the present invention;

Fig. 2 is a diagram of a preferred embodiment of the main site page for a web site according to the present invention;

Fig. 3 is an illustration of a preferred embodiment of the header frame of Fig. 2;

Fig. 4A is an illustration of a preferred embodiment of the browse frame of Fig. 2;

Fig. 4B is a web page including an example of a subcategory list;

Fig. 4C is a web page including an example of a product list;

Fig. 4D is a web page including an example of specific product information;

Fig. 4E is a web page including another example of specific product information;

Fig. 5 is a flowchart of the steps involved in browsing through the category and subcategory links for a specific product according to a preferred embodiment of the present invention;

Fig. 6A is an illustration of a preferred embodiment of the shopping basket frame of Fig. 2, with the shopping basket empty;

Fig. 6B is an illustration of a preferred embodiment of the shopping basket frame of Fig. 2, with the shopping basket containing an item;

Fig. 7 is a flowchart of the steps of the check-out process according to a preferred embodiment of the present invention;

Fig. 8A is an illustration of a web page containing fields for the entry of shipping information, according to a preferred embodiment of the present invention;

Fig. 8B is an illustration of a web page for final purchase approval, according

to a preferred embodiment of the present invention;

Fig. 9 is an illustration of a web page containing order history information, according to a preferred embodiment of the present invention;

Fig. 10 is a flowchart of the steps for a login procedure according to a preferred embodiment of the present invention;

Fig. 11 is an illustration of a web page containing fields for the entry of login information, according to a preferred embodiment of the present invention;

Fig. 12 is an illustration of a web page containing fields for the entry of registration information, according to a preferred embodiment of the present invention;

Fig. 13A is an illustration of a web page containing fields for the entry of shipping information, according to a preferred embodiment of the present invention;

Fig. 13B is an illustration of a web page containing fields for the entry of payment information, according to a preferred embodiment of the present invention;

Fig. 14 is an illustration of a web page containing options for monthly list editing, according to a preferred embodiment of the present invention;

Fig. 15 is an illustration of a web page containing monthly list information, according to a preferred embodiment of the present invention;

Fig. 16A is an illustration of an email notification according to a preferred embodiment of the present invention; and

Fig. 16B is another illustration of an email notification according to a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Fig. 1 provides a functional block diagram of a virtual store according to a preferred embodiment of the present invention. Preferably, the virtual store of the present invention sells consumable goods, such as personal and healthcare products. The virtual store includes a web site 10, an order fulfillment center 20, a web site administration and management center 30, a customer service headquarters 40, and a payment processing center 50. Although all of these functions may be performed at a single location by a single organization, many of these functions (such as order

fulfillment, web site management, customer service, and payment processing) may be contracted out to well-established independent third parties, who specialize in such functions. As shown in Fig. 1, information may be exchanged with such third parties through the Internet/public telephone network 60.

5 The web site 10 of the present invention comprises an automated process that depends on a collection of hardware and software. As shown in Fig. 1, the hardware includes server computers 100 to 105, such as the Compaq ProLiant 3000 Servers from Compaq Computer Corp. of Houston, Texas. Preferably, the server computers provide hot-swappable mirrored hard drives and power supplies. The hardware also
10 includes load balancing equipment 106, such as the Cisco LocalDirector product from Cisco Systems of San Jose, California. Load-balancing hardware allows multiple server computers to be represented by a single virtual IP address and balances Web requests to that IP address among the multiple servers running behind it. Thus, load-balancing hardware allows the appearance of a single Web server to the Internet user,
15 but behind the load-balancing hardware there may be many physical network servers acting in conjunction. Load-balancing hardware also allows a web site to be easily scaled for greater web traffic by simply adding more physical servers.

 The web site 10 also includes an ethernet switch 108, a firewall server 110, and a router 112, coupled in series as shown in Fig. 1. The router 112 provides an
20 interface between the Internet 60 and the internal network of the web site serviced by the ethernet switch 108. The router may be, for example, the Cisco 7500 Series core router (Exodus N.O.C.) from Cisco Systems, Inc. The ethernet switch 108 may be the Intel Express 510T from Intel Corporation.

 The web site 10 may also include a modem 114 for communication through
25 the telephone system with third party service providers who do not have Internet connectivity. Alternatively, the modem 114 may be used a backup communication device with third party service providers who do have Internet connectivity.

 The firewall server 110, positioned between the router 112 and the ethernet switch 108, provides the security features that are preferred for an online commerce
30 application. These security features prevent unauthorized access to sensitive information such as inventory, customer information, and order history. Without

security to protect it, this information might be used by non-authorized persons for criminal or malicious purposes.

Firewall servers are well-known in the industry. A firewall server includes a workstation or server computer running firewall software. The firewall workstation or
5 server computer may be, for example, the Sun Ultra 5 from Sun Microsystems, Inc. The firewall software preferably provides a good front end for managing security. In addition, the firewall software preferably offers a stateful inspection mechanism, which utilizes communication-derived and application-derived state and context information. Stateful inspection makes it possible to upgrade a web site on a
10 continuous basis, even as new protocols and applications become part of the Internet. An example of firewall software that utilizes stateful inspection is Check Point FireWall-1 software from Check Point Software Technologies, Ltd., of Redwood City, California.

In addition to firewall software, the web site 10 preferably also utilizes Access
15 Control Lists (ACLs) in its router 112 for inter-application server communication. The web site 10 should also have the capability to encrypt all information if necessary. Preferably, the web site uses encryption whenever sensitive information is transmitted or data is likely to be snooped. For example, all web pages involving any customer information are preferably encrypted using Secure Sockets Layer (SSL), which is built
20 into most web browsers.

The application environment of the virtual store according to the present invention can be best described as a web-enabled, multi-tier system. As the description indicates, there are multiple tiers involved in the application. The first tier, or front end, is comprised of web browsers (not shown), such as Netscape
25 Navigator from Netscape Corp. and Internet Explorer from Microsoft Corp., which are used by the customers of the virtual store. The first tier includes the web pages that are visible with the web browsers.

The second or middle tier of the system includes one or more web servers 100. The web servers 100 form the communication hub of the virtual store. The web
30 servers 100 assemble and provide the web pages viewed by customers with their web browsers. The web servers are accessed at a unique address referred to as a Universal

Resource Locator (URL). (As discussed previously, the load balancing equipment 106 balances the web requests to this address among the multiple web servers.) An example of a URL for a web site's main page is "www.mybasics.com."

5 Preferably, the web pages generated by the web servers 100 are dynamic pages. Dynamic page generation allows the end user to receive a page incorporating both static and dynamic content. The static content may include corporate logos, images and help information, while the dynamic content may include product, price, and customer account information. The dynamic content of web pages typically is stored in a database.

10 The web servers 100 also provide the interface to the back-end systems that handle the data and the transactions associated with an electronic commerce site. For example, the web site 10 may include a database server 102 and an email server 104. The database server 102 stores all customer account, customer order, and product information in relational databases. The email server 104 allows email
15 communication with customers. Preferably, there is also provided a standby database server 103 and a standby email server 105. The standby servers are used in case the normally functioning servers malfunction or are unavailable due to maintenance.

The web servers 100, database server 102, and email server 104 may run any well-known operating system and server software. For example, all of the servers
20 may run the Microsoft Windows NT 4.0 operating system. In addition, the web servers 100 may run the Microsoft Internet Information Server (IIS) web server software. The web server software may be enhanced by any well-known e-commerce software, such as Microsoft Site Server software, which provides the functionality necessary to build simple e-commerce sites, such as order processing and customer
25 database wizards. If dynamic page generation is used, dynamic page generation software may be used, such as Microsoft Active Server Pages software, which is a component of the Microsoft Site Server software.

The database server 102 and standby database server 103 may run any well-known database software, such as Microsoft SQL 6.5 Server software. The email
30 server 104 and standby email server 105 may use any well-known SMTP-compatible email server software, such as SLmail software from Seattle Lab of Bothell,

Washington.

A virtual store according to the present invention preferably offers at least two sales models. In the first sales model, a customer may make a one-time order. The virtual store should provide this capability because most users will probably want to try a store's service before becoming a regular customer of the store. The second sales model is that of the regular customer, who sets up a list of regular orders that are shipped periodically to the customer. The customer can use the regular list to replenish consumable products with significantly less difficulty than reordering everything by browsing and searching. The equivalent process in a physical store would be a customer walking in and having his or her shopping cart already filled with all the products he or she wants.

The features of the web site 10 of Fig. 1 will now be discussed. The unique nature of a web application, in which every web page can provide hyperlinks to every other web page, makes it difficult to discuss functionality in a serial fashion. Nonetheless, this specification provides the basic features that customers utilize when executing a transaction on a web site according to the present invention. Each basic feature may be considered atomic in nature. Yet it must be realized that many of these features may be interlinked from many different web pages.

Fig. 2 illustrates the preferred components of the main site page for a web site according to the present invention. Preferably, the main site page includes three frames: a header frame 210, a browse frame 220, and a shopping basket frame 230.

Fig. 3 shows a preferred embodiment of the header frame 210 of Fig. 2. The header frame 210 contains a login hyperlink 310 to a login page, an account/order hyperlink 320 to an account and order page, and a help/customer-service hyperlink 330 to a help and customer service information page. The header frame 210 also includes a search prompt 340, which allows entry of a product name or keyword to search for on the web site. Preferably, the header frame 210 is included in every web page generated for the web site 10.

Fig. 4A shows a preferred embodiment of the browse frame 220. The browse frame 220 contains a plurality of category hyperlinks 410 corresponding to the main product categories of the web site 10. Underneath each category hyperlink 410, there

may be one or more levels of subcategory links 420. The category and subcategory hyperlinks allow a user to shop for items by browsing through a hierarchical list of category and subcategory links until a specific product is found.

Fig. 5 provides a flowchart of exemplary steps involved in browsing through the category and subcategory links for a specific product. In step 500, the browse frame 220 (Fig. 4A) is displayed. When a category hyperlink 410 is selected from the browse frame 220, a list of subcategory hyperlinks 420 is displayed in step 510. For example, by selecting the "Men's Products" category hyperlink in Fig. 4A, the subcategory list of Fig. 4B may be displayed in web page 400a. When a subcategory hyperlink 420 is selected in either steps 500 or 510, a product list for that subcategory is displayed in step 520. For example, by selecting the "Razors and Blades" subcategory hyperlink in Fig. 4B, the product list of Fig. 4C may be displayed in web page 400b. As shown in Fig. 4C, the product list preferably contains a product's description, size, and price. At this point, by selecting a specific product from the product list, a web page containing information about that specific product is displayed in step 530. Examples of web pages 400c and 400d for specific products are shown in Figs. 4D and 4E.

In addition to information about a product, the specific product page includes an add-item hyperlink 430 and a quantity field 440. The add-item hyperlink 430 allows a user to add an item to the user's shopping basket (shown in Fig. 4D) or to the user's monthly list (shown in Fig. 4E), both of which will be discussed in more detail below. The quantity field 440 allows a user to select the number of an item to add to the shopping basket or monthly list.

If a user selects the add-item hyperlink 430, the system checks, in step 540, whether the user is logged in to the web site 10. Preferably, the user must be logged in to the web site to add items to a shopping basket or a monthly list. Accordingly, if a user is not logged into the system, a login prompt (to be discussed more fully below) is displayed. If a user is logged in, the item selected by the user is added to the user's shopping basket or monthly list in step 550. The shopping basket frame or monthly list is then updated.

Figs. 6A and 6B show preferred embodiments of the shopping basket frame 230. The shopping basket frame 230 contains a check-out hyperlink 610 for a check-out process, an empty-basket hyperlink 620 to empty the shopping basket, and an add-item hyperlink 630 to add items in the shopping basket to the user's monthly list. In addition, the shopping basket contains a display area 640 for displaying the products currently in a user's shopping basket. Fig. 6A shows the display area 640 with a message indicating the basket is empty. Fig. 6B shows the display area 640 when a product has placed in the shopping basket. When a product has been placed in the shopping basket, the display area 640 contains a quantity field 650 and an update hyperlink 660. A user may edit the quantity of a product by entering a new quantity number in the quantity field 650 and selecting the update hyperlink 660. By entering a zero value in the quantity field 650, a product may be deleted from the shopping basket.

The shopping basket is maintained as long as a user is logged in to the web site and has not finished the check-out process. Items may be added at any time through the browsing procedure available through the browse frame or the search procedure available through the search prompt of the header frame. When items are placed in the basket, they may be edited or deleted from the basket at any time by entering a new quantity in the quantity field 650 and selecting the update link 660. The entire basket may also be deleted at any time by pressing the empty-basket hyperlink 620.

A user may also choose to add items in the shopping basket to a monthly list by selecting the add-item hyperlink 630. If the user decides to use the current basket to create or edit a monthly list, the system enters a monthly list management process, to be discussed below. Otherwise the user finishes adding items to the current basket and enters the check-out process by selecting the check-out hyperlink 610.

Fig. 7 shows a preferred embodiment of the steps of the check-out process. In step 700, when the check-out hyperlink 610 in the shopping basket has been selected, a shipping instructions page is displayed. An example of such a web page 800a is shown in Fig. 8A. The shipping instruction page contains a check box 805 indicating whether the user will accept partial shipments, a field 810 indicating the shipping

method, and a name field 820, one or more address fields 830, and telephone number field 840. Preferably, the values in these fields default to the user's name, address, and telephone number (which is known once the user logs in to the system).

The shipping information page contains a continuation hyperlink 850, labeled
5 "total," which indicates that the user is finished entering the shipping information. When this hyperlink is selected, a final purchase approval page is displayed in step 710 (Fig. 7). An example of the final purchase approval page 800b is shown in Fig. 8B. The page contains purchase total information 860, credit card information 870, and billing information 880. The page also contains a completion hyperlink 890,
10 labeled "purchase," which indicates completion of the purchase. Since some users may be concerned about providing credit card information over the Internet (even though such information is preferably encrypted), payment information may be provided instead to a customer service representative over the telephone.

Returning to Fig. 7, when a user selects the completion hyperlink 880,
15 payment processing is performed in step 720. Payment processing includes receiving an authorization for the purchase amount from the user's credit card institution. If authorization is received, in step 730, the user's order is registered and collected in a batch with other orders. The batches of orders are periodically transmitted to the order fulfillment center throughout a day. For example, the batches may be sent three
20 times a day at 3:00 PM, 10:00 PM, and 3:00 AM. In step 740, a status message is displayed to the user indicating whether submission of the order was successful. If submission of the order was successful, a reference number for the order is returned to the user for tracking purposes or for other inquiries concerning the order.

A user may track and manage orders through the account/order hyperlink 320
25 (Fig. 3) of the header frame. Fig. 9 shows a example of an account/order page 900 that is displayed when the account/order hyperlink 320 is selected. The order/account page 900 contains the name of the user 910 (which is known to the system once the user logs in) and an order history list 920 for the user. The order history list 920 preferably contains the order reference number, order date, purchase amount, status of
30 the order, and the shipping tracking number. The order/account page also contains an account hyperlink 930, which provides a user with the ability to update account

information. The order/account page also contains a continuation hyperlink 940, which allows a user to continue shopping on the web site.

Preferably, prior to shopping, a user must login to the web site. The login process identifies a user to the system. The user may login by pressing the login
5 hyperlink 310 in the header frame (Fig. 3). Alternatively, if a user attempts to add an item to the shopping basket before logging in, a login prompt is automatically presented to the user.

Fig. 10 shows a flowchart of the steps for a preferred embodiment of the login procedure. In step 1000, a login page is displayed. An example of a such a page 1100
10 is shown in Fig. 11. The login page contains an identification field 1110, such as a user's email address, and a password field 1120. The login prompt also contains a completion hyperlink 1130, labeled "lookup," which indicates that a user has finished entering the login information, and a registration hyperlink 1140 for new users.

When a user selects the completion hyperlink 1130, the system queries the
15 customer database (in the database servers) with the login information in step 1010. In step 1020, it is determined if the identification information has been found in the customer database and the password is correct. If the identification information has been found and the password is correct, in step 1040, the system checks whether the user was attempting to add an item to the shopping basket prior to logging in. If so,
20 the item is added to the shopping basket in step 1150. In step 1070, the system returns the user to the last web page the user was viewing prior to logging in. If the user's identification information is not found in the customer database or the password is incorrect, an error message is displayed in step 1030.

When a user first visits the web site 10, the user preferably must register with
25 the system prior to being able to shop or create a monthly list. New users may register at any time while browsing the site by selecting the login hyperlink 310 (Fig. 3) on the header frame and then selecting the registration hyperlink 1140 (Fig. 11) on the login prompt page. Preferably, registration is performed through a single web page, such as the page 1200 shown in Fig. 12. On the registration page, a user is preferably
30 requested to enter such information as name 1210, email address 1220, password 1230, mailing address 1240 (which may be used as a default shipping and billing

address), and telephone number 1250. When a user is finished entering registration information, a completion hyperlink 1260, labeled "register," may be selected.

Optionally, the registration procedure may allow a single user to set up multiple accounts, with multiple billing and shipping addresses (not shown in the figures). Multiple billing and shipping addresses may be useful when a single user is responsible for shopping for multiple parties. For example, the child of a senior citizen may take on the responsibility for shopping for his or her parent as well as himself or herself. In this case, different orders may need to be shipped to different addresses. When multiple accounts are set up, the address to which an order should be shipped may be indicated by an account identification during the login procedure (not shown in the figures).

Advantageously, according to the present invention, the web site allows a user to create a regular reorder list. This list enables a user to easily manage items that the user orders on a regular basis. If a user has set up multiple accounts, the user may have multiple regular order lists, which are independent of each other.

Each item in the reorder list may have an independent cycle for replenishment. For instance, a user may create a list in which one item is reordered weekly, another is reordered monthly, and yet another is reordered every three months. Preferably, though, replenishment cycles in the system are based on a monthly unit of time. Month-based reordering is preferred to keep list management as simple as possible for both the user and the replenishment management system. Nonetheless, any reorder frequency may be used according to the present invention.

Once a customer creates a monthly list, that customer need never order using a shopping basket again. While it is possible for the customer to return and put in single orders at any time, it is also possible for the customer to place all subsequent orders by adding, removing, and re-timing items on the monthly list.

A monthly list is created or edited by selecting the add-item hyperlink 630 (Fig. 6) in the shopping basket, which is labeled "Add to Monthly List." If a monthly list does not exist, a user is prompted to enter shipping and billing information in web pages 1300a and 1300b as shown in Figs. 13A and 13B, respectively. This information is the same as that requested during the check-out process, which was

described with reference to Figs. 8A and 8B. For those users concerned about transmitting billing information over the Internet, billing information may be submitted instead to a customer service representative using the telephone. This billing information may then be saved to the user's account, or the user may choose to
5 resubmit the information using the telephone each and every time the monthly list is due for replenishment.

If a monthly list already exists when a user selects the add-item hyperlink 630, the user is given three options as illustrated in Fig. 14. The user may select one of the following hyperlinks in web page 1400: an add-basket hyperlink 1410, a replace-list
10 hyperlink 1420, and an edit-list hyperlink 1430. If a user selects the add-basket hyperlink 1410, the items in the user's shopping basket are added to the user's monthly list. If a user selects the replace-list hyperlink 1420, the user's monthly list is replaced by the items in the user's shopping basket. If a user selects the edit-list
15 hyperlink 1430, the user is simply transferred to his or her monthly list, which the user may then edit.

Alternatively, if a monthly list already exists, a user may edit his or her list through the account/order page 900 (Fig. 9). In this case, the account/order page 900 may include a hyperlink to the user's monthly list (not shown in Fig. 9).

Fig. 15 shows a preferred embodiment of a user's monthly list. The monthly
20 list comprises a web page 1500 including several columns: a delete column 1510, an item column 1520, a quantity column 1530, a unit price column 1540, a frequency column 1550, a subtotal column 1560, and an estimated arrival column 1570. The delete column 1510 allows a user to delete an item from the monthly list by selecting the hyperlink in that column for an item. The item column 1520 provides a brief
25 description of each item in the monthly list. The quantity column 1530 provides a display of the number of an item to be shipped. The quantity of an item may be changed by selecting the appropriate "+" or "-" hyperlink in the quantity column. The unit price column 1540 displays the unit price of an item. The frequency column 1550 displays the reorder frequency of an item. The reorder frequency may be
30 changed by selecting the appropriate "+" or "-" hyperlink in the frequency column. The subtotal column 1560 provides the subtotal (the quantity times the unit price) for

each item. The estimated arrival column 1570 shows the next estimated date of arrival of each item. Each item is shipped soon after it is initially added to the monthly list. Thereafter, the shipping date is determined by the reorder frequency indicated in the frequency column 1550.

5 The monthly list also includes information 1575 regarding the total purchase amount for the entire list. A hyperlink 1580 is included to change shipping and billing information. Another hyperlink 1585 is included to save the monthly list. Another hyperlink 1590 is included to add items to the monthly list. By selecting this hyperlink, a user is returned to the web site's main page, where the user may shop for
10 more items by browsing or searching. When a user selects a specific product, however, a user is prompted to add the product to the monthly list, instead of to the shopping basket (see Fig. 4E).

 To distinguish between a user who is selecting items for a monthly list and a user who is selecting items for a shopping basket, the web site must maintain the state
15 of a user session. A session can be defined as the series of steps or pages a user navigates while visiting a specific web site. Sites that require a user to log in, execute an ordered series of steps, and submit the transaction all revolve around the concept of a session.

 Although the Web is based on the HTTP protocol, which is stateless, state may
20 be maintained throughout a session using various techniques. State may be maintained, for example, through the use of cookies. A disadvantage in using cookies, however, is the widespread public concern that cookies are an invasion of privacy because cookies are stored on a user's computer system and are readily available to any web site. Thus, it is possible for a web site to know the other web
25 sites that a user has visited. Although users may choose not to accept cookies, rejecting cookies may cause web sites to become non-functional (i.e., unable to maintain state).

 Another technique to maintain state on the Web is through the use of the URL with variables and arguments. In this technique, each web page that is transmitted to a
30 user contains hyperlinks with unique URLs. Each URL is unique to a user in that unique variable and value arguments are appended to a base URL. The base URL is

actually a script or program that processes the appended variable and value arguments. Common Gateway Interface (CGI) programs are designed in such a manner. Special delimiters, such as a question mark, provide an indication as to the separation between the base URL and the appended variables and values. The web server removes the
5 appended variables and values and then transmits them to the program or script indicated in the base URL.

Instead of CGI programs or scripts, Microsoft's Active Server Pages (ASP) technology may be used. ASP is similar in concept to CGI programs, but provides more efficient use of computer resources than CGI programs. It should be noted that
10 ASP involves dynamic content. That is, the URLs are generated dynamically by the ASP server, which communicates with the web server. The dynamic content is extracted from a database, while template HTML files, image files and the like are stored as static documents. The resulting dynamic page is generated from these pieces and returned to the user.

15 When a user is finished editing the user's monthly list, the user selects a completion hyperlink 1595, labeled "Send Next Monthly Order." (For first time users of monthly lists, the completion hyperlink 1595 may be labeled "Send First Monthly Order.") This completion hyperlink 1595 causes the system to process the items that have been added or that are due for delivery in a similar manner to the check-out
20 process that was described with respect to Fig. 7. In the case of a monthly list, however, a user is not asked to enter shipping and billing information each time an order is processed; a user simply enters such information when the monthly list is first created (unless the user chooses to resubmit billing information over the telephone to a customer service representative each time an order is scheduled to be shipped).

25 Advantageously, according to the present invention, the web site also includes an email notification system. The email notification system works in conjunction with the customer account database stored in the database server. There are several email notifications that a customer can receive. An email notice may be sent immediately to a customer after an order has been successfully submitted for payment
30 processing, thanking the customer for the order. A second email may be sent to the customer the following day, after the web site has received an order fulfillment

summary from the order fulfillment center for the batches submitted on the previous day. This second email notifies the customer whether the order was successfully processed or whether any items were canceled due to problems with order fulfillment (such as inventory discrepancies at the warehouse facilities).

5 Advantageously, a customer who sets up a monthly list also receives a regular email notification a predetermined number of days before an item on the list is scheduled to be received by the customer. For example, a customer may receive an email notification five days before an item is scheduled to be received. Optionally, multiple email notifications may be sent to a customer. For example, an email
10 notification may be sent twice: once ten days before an item is scheduled to be received and again five days before an item is scheduled to be received.

 The email notification contains a unique embedded identifier that allows a customer to reorder the products on the regular list without going through the normal processes associated with ordering a product. The identifier is unique in that it
15 uniquely identifies the customer and is associated with the customer's monthly list.

 The embedded identifier may be, for example, a hyperlink embedded in the email notification containing a unique URL that automatically logs a customer into the system and places the customer directly at the customer's monthly list page. This enables a customer to return to the web site instantaneously to confirm the order,
20 without going through a logging in and selection process.

 Figs. 16A and 16B provide examples of email notifications with unique hyperlinks embedded in them. In Fig. 16A, an email notification 1600a is shown as viewed with an email reader that does not support HTML text. The email notification 1600a contains the URL of a hyperlink 1610. The hyperlink 1610 contains a base
25 address and appended arguments. The base address is "http://www.mybasics.com/mybasics/frame.asp," which refers to an ASP server. The base address is separated from the appended arguments by a question mark. The appended arguments are further delimited by the ampersand. Together, the appended arguments uniquely identify the customer and the customer's monthly list page. To
30 use the URL, a customer may copy the URL into his or web browser.

Fig. 16B shows an email notification 1600b as viewed with an email reader that supports HTML text. In this case, the hyperlink 1620 is not displayed as a URL, but is displayed instead as the label "<<CLICK HERE>>". To use the hyperlink 1620, a customer would simply need to click on the hyperlink with a mouse pointer.

- 5 Of course, the email notification 1600b contains a URL similar to the URL of the email notification 1600a, but because of the sophistication of the email reader, the customer does not need to be bothered with the actual URL; the customer sees only a label associated with the URL.

- Unique identifiers may be embedded in email notification in other ways. For
10 example, the identifiers may also be part of an HTML page that is attached to the email. The HTML page may contain information regarding the customer's monthly list, and the hyperlinks on the HTML page may be unique URLs that allow a customer to automatically login prior to performing a specified action associated with the hyperlinks, such as confirming the next order. In each of the cases described above, a
15 failure to respond to the email by using the embedded identifier indicates that a user does not wish the order to be shipped.

- In addition, because most people have a voice mail service at work and/or an answering machine at home, which may be checked more often than their email, it may be desirable to leave a voice message with one of these services to alert a user
20 that an email notification has been sent.

- The timing of the email notification is critical. On the one hand, if a customer does not believe that it is time to reorder when an email is received, the email may be ignored, in which case there is no further notification until the following cycle. On the other hand, if an email arrives too late, a customer may have gone to a physical
25 store to replenish the needed items. Accordingly, it is greatly advantageous to assist a customer in setting up an accurate reorder frequency for each item.

- When a customer first creates a reorder list, the customer may not be knowledgeable about his or her consumption patterns and, thus, may not be able to provide an accurate reorder frequency. Although a simple default reorder frequency
30 may be used (for example, one month) for all items that the customer does not explicitly provide a value for, it is preferred to provide average household

consumption statistics on an item-by-item basis for each item for which the customer does not explicitly provide a value. Such statistics may be licensed, for example, from the ACNielsen company of Stamford, Connecticut. Consumption statistics are available at the national, regional, and local levels, as well as by other demographics.

- 5 Preferably, to best assist the customer in setting up a reorder frequency for each item, the consumption statistics used for each item are refined by using any pertinent demographic data available from a customer's account (e.g., the customer's geographic location, sex, age, etc.).

- 10 Once a customer begins ordering from the web site regularly, individual profiling becomes possible to better assist the customer in setting up accurate reorder frequencies. Therefore, the web site preferably profiles the consumption of users and feeds that information into a replenishment expert system. The replenishment expert system then is able to help a user refine the replenishment cycle of products on an itemized basis.

- 15 Additionally, each user may be classified within a common profile group, and the group's usage statistics may be used as a starting point for a new user that is classified within the same group. Thus, as more consumers utilize the web site service, initial product replenishment cycles may also be based on users with similar profiles. The usage patterns of the similar users who utilize the web site may be more accurate than general consumption statistics for average households.

- 20 The level of interaction between a user and the replenishment expert system may be varied. A user may wish the replenishment expert system to simply suggest new replenishment cycles as time goes on, or a user may wish the replenishment expert system to automatically control the email notification system. In each case, the replenishment expert system and email notification system establish a closed feedback loop, in which each continually drives the other to become more accurate.

- 25 The replenishment expert system may also be used with customers who enter single orders. The products in a single order are no different from those in a monthly list, in that there may be average consumption statistics available for them. Thus, an email notification may be sent to a single-order user. The timeliness of this email notification is, of course, very important. If a customer receives such a notification at

just the point in time when an item purchased is running low, the customer may be impressed by the timeliness of the notification and may become a regular user of the virtual store.

Preferably, the email notifications are controlled by a scheduling utility
5 provided by the operating system running on the servers. Operating systems typically provide such scheduling utilities. For example, under the Unix operating system, the "cron" utility allows a programmer to specify in a control file the times and dates a program should be executed. In a server configuration with servers running the Microsoft Site Server software and the Windows NT 4.0 operating system, the server
10 software defines a "pipeline" model through which the workflow, interconnection, communication, and execution time of software modules are specified.

The order status and reorder notification emails are preferably scheduled with such a scheduling utility. For the order status email, the scheduling utility may be configured to launch a program that looks for the order fulfillment summary file once
15 a day (at a time when it is expected to have arrived). This program then reads the order fulfillment summary file and sends a status email (through the email server) to each customer who placed an order listed in the order fulfillment file.

For the reorder notification email, the scheduling utility launches another program each day that queries the customer database. The program queries the
20 database for all customers who have a monthly list and are due for notification. Customers will be due for notification a predefined number of days before an item in their monthly list is scheduled to be received (for example, five days). If a customer is due for notification, the customer's email address is retrieved from the customer's account, and an email reminder is constructed for that customer. As previously
25 described, the email contains an embedded mechanism, such as a unique hypertext link, which allows the customer to return directly to his or her own monthly list page to confirm (and possibly edit) his or her order. If statistical and/or profiling is used to predict reorder frequency, each time a customer confirms and/or edits his or her monthly list, the replenishment expert system tracks this information to better estimate
30 the customer's true replenishment needs.

A similar program is also launched daily for those customers who have placed an order but do not have a monthly list. This program is scheduled to run daily and queries the database for customers who do not have a monthly list, have placed an order a predefined number of days previously (for example, twenty-five days previously), and have not received an email notification for the same order in the past. The purpose of this email is to impress the customer by the timeliness of the reminder and to entice the customer into creating a monthly list, rather than making single orders.

Advantageously, a web site according to the present invention provides an easy, convenient, and accurate way for customers to replenish products that they order on a regular basis. Although the present invention has been described with reference to certain preferred embodiments, various modifications, alterations, and substitutions will be known or obvious to those skilled in the art without departing from the spirit and scope of the invention, as defined by the appended claims.

CLAIMS

1. A method for processing orders for products through a network coupled to at least a first computer system and a second computer system, said first computer system having stored therein a database of products and a database of customers, said second computer system having associated therewith an electronic address associated with a customer in said database of customers, said method comprising:
- receiving at said first computer system a selection of one or more products from said database of products from said customer;
- 10 storing data in said first computer system indicating a reorder list for said customer responsive to said selection of one or more products;
- storing data in said first computer system indicating a reorder frequency for each of said one or more products in said reorder list; and
- transmitting an electronic notification over said network regarding at least one item in said reorder list responsive to the reorder frequency data associated with said at least one item, said electronic notification being transmitted from said first computer system to said second computer system using said electronic address of said customer, said electronic notification comprising a reorder identifier uniquely associated with said customer and said reorder list.
- 15
2. The method of claim 1, further comprising the step of receiving a communication at said first computer system from said customer comprising said reorder identifier to identify to said first computer system that said communication is in regard to said customer and said reorder list.
- 20
3. The method of claim 1, wherein said network is the Internet.
- 25
4. The method of claim 1, wherein said electronic address is an email address.

5. The method of claim 1, wherein said electronic notification is transmitted from said first computer system to said second computer system using the SMTP protocol.

6. The method of claim 1, wherein said reorder identifier is a URL comprising a base address and one or more appended arguments.

7. The method of claim 6, wherein said base address corresponds to a CGI script.

8. The method of claim 6, wherein said base address corresponds to an ASP server.

9. The method of claim 6, wherein said URL is included in an HTML page attached to said electronic notification.

10. The method of claim 1, wherein said reorder identifier is uniquely associated with said electronic notification.

11. The method of claim 1, wherein said reorder identifier is associated with a web page comprising information relating to said reorder list.

12. The method of claim 1, further comprising the step of receiving at said first computer system data from said customer indicating a reorder frequency for each of said one or more products in said reorder list.

13. The method of claim 1, wherein said step of storing data indicating a reorder frequency comprises assigning a reorder frequency to at least one item in said reorder list based on consumption statistics for said at least one item.

14. The method of claim 13, wherein said consumption statistics is the average consumption of said at least one item by a group of people.

15. The method of claim 13, wherein said consumption statistics is based on the demographic characteristics of said customer.

5 16. The method of claim 1, wherein said step of storing data indicating a reorder frequency comprises assigning a reorder frequency to at least one item in said reorder list based on the past history of purchases of said customer.

10 17. The method of claim 1, wherein said step of storing data indicating a reorder frequency comprises assigning a reorder frequency to at least one item in said reorder list based on the past history of purchases of customers in said database of customers having similar profiles to said customer.

18. The method of claim 17, wherein said similar profiles are based on demographic characteristics.

15 19. The method of claim 1, further comprising the step of storing a voice message on a voice mail service of said customer, notifying said customer that said electronic notification has been transmitted.

20. The method of claim 1, further comprising the step of storing a voice message on an answering machine of said customer, notifying said customer that said electronic notification has been transmitted.

20 21. The method of claim 1, wherein said database of customers includes a customer identifier and a customer password associated with said customer, and further comprising the steps of:

receiving a communication by said first computer system over said network of said customer identifier and said customer password of said customer;

receiving an additional selection of one or more products from said database of products from said customer;

storing data in said first computer system indicating a shopping basket for said customer responsive to said additional selection of one or more products; and

5 transferring at least one item from said shopping basket to said reorder list.

22. A data processing system for processing orders for products over a network coupled to at least one computer system, said data processing system comprising:

10 a memory storage unit having stored therein a database of products and a database of customers, a customer in said database of customers having associated therewith an electronic address associated with said at least one computer system;

means for receiving a selection of one or more products from said database of products from said customer;

15 means for storing in said memory storage unit data indicating a reorder list for said customer responsive to said selection of one or more products;

means for storing in said memory storage unit data indicating a reorder frequency for each of said one or more products in said reorder list; and

20 means for transmitting from said data processing system to said at least one computer system an electronic notification over said network regarding at least one item in said reorder list responsive to the reorder frequency data associated with said at least one item, said means for transmitting using said electronic address of said customer, said electronic notification comprising a reorder identifier uniquely associated with said customer and said reorder list.

25 23. The data processing system of claim 22, further comprising means for receiving a communication from said customer comprising said reorder identifier.

24. The data processing system of claim 22, wherein said network is the Internet.

25. The data processing system of claim 22, wherein said electronic address is an email address.

26. The data processing system of claim 22, wherein said means for transmitting utilizes the SMTP protocol.

5 27. The data processing system of claim 22, wherein said reorder identifier is a URL comprising a base address and one or more appended arguments.

28. The data processing system of claim 27, wherein said base address corresponds to a CGI script.

10 29. The data processing system of claim 27, wherein said base address corresponds to an ASP server.

30. The data processing system of claim 27, wherein said URL is included in an HTML page attached to said electronic notification.

31. The data processing system of claim 22, wherein said reorder identifier is uniquely associated with said electronic notification.

15 32. The data processing system of claim 22, wherein said reorder identifier is associated with a web page comprising information relating to said reorder list.

33. The data processing system of claim 22, further comprising means for receiving data from said customer indicating a reorder frequency for each of said one or more products in said reorder list.

20 34. The data processing system of claim 22, wherein said means for storing data indicating a reorder frequency comprises means for assigning a reorder frequency

to at least one item in said reorder list based on consumption statistics for said at least one item.

35. The data processing system of claim 34, wherein said consumption statistics is the average consumption of said at least one item by a group of people.

5 36. The data processing system of claim 34, wherein said consumption statistics is based on the demographic characteristics of said customer.

37. The data processing system of claim 22, wherein said means for storing data indicating a reorder frequency comprises assigning a reorder frequency to at least one item in said reorder list based on the past history of purchases of said customer.

10 38. The data processing system of claim 22, wherein said means for storing data indicating a reorder frequency comprises assigning a reorder frequency to at least one item in said reorder list based on the past history of purchases of customers in said database of customers having similar profiles to said customer.

15 39. The data processing system of claim 38, wherein said similar profiles are based on demographic characteristics.

40. The data processing system of claim 22, further comprising means for storing a voice message on a voice mail service of said customer, notifying said customer that said electronic notification has been transmitted.

20 41. The data processing system of claim 22, further comprising means for storing a voice message on an answering machine of said customer, notifying said customer that said electronic notification has been transmitted.

42. The data processing system of claim 22, wherein said database of customers includes a customer identifier and a customer password associated with

said customer, and further comprising:

means for receiving a communication by said data processing system over said network of said customer identifier and said customer password of said customer;

5 means for receiving an additional selection of one or more products from said database of products from said customer;

means for storing data in said memory storage unit indicating a shopping basket for said customer responsive to said additional selection of one or more products; and

10 means for transferring at least one item from said shopping basket to said reorder list.

43. A system for ordering products over a network, comprising:

a first computer system coupled to said network, said first computer system having stored therein a database of products and a database of customers;

15 a second computer system coupled to said network, said second computer system having associated therewith an electronic address associated with a customer in said database of customers;

means for selecting one or more products from said database of products by said customer to establish a reorder list;

20 means for associating a reorder frequency with each of said one or more products in said reorder list;

means for storing each of said one or more products and its associated reorder frequency on said first computer system; and

25 means for transmitting from said first computer system to said second computer system an electronic notification regarding at least one item in said reorder list based on the reorder frequency associated with said at least one item, said means for transmitting using said electronic address of said customer, said electronic notification comprising a reorder identifier uniquely associated with said customer and said reorder list.

44. The system of claim 43, further comprising means for communicating with said first computer system using said reorder identifier to identify said customer to said first computer system.

45. The system of claim 43, wherein said network is the Internet.

5 46. The system of claim 43, wherein said electronic address is an email address.

47. The system of claim 43, wherein said means for transmitting utilizes the SMTP protocol.

10 48. The system of claim 43, wherein said reorder identifier is a URL comprising a base address and one or more appended arguments.

49. The system of claim 48, wherein said base address corresponds to a CGI script.

50. The system of claim 48, wherein said base address corresponds to an ASP server.

15 51. The system of claim 48, wherein said URL is included in an HTML page attached to said electronic notification.

52. The system of claim 43, wherein said reorder identifier is uniquely associated with said electronic notification.

20 53. The system of claim 43, wherein said reorder identifier is associated with a web page comprising information relating to said reorder list.

54. The system of claim 43, further comprising means for receiving data from said customer indicating a reorder frequency for each of said one or more products in said reorder list.

55. The system of claim 43, wherein said means for associating a reorder
5 frequency comprises means for assigning a reorder frequency to at least one item in said reorder list based on consumption statistics for said at least one item.

56. The system of claim 55, wherein said consumption statistics is the average consumption of said at least one item by a group of people.

57. The system of claim 55, wherein said consumption statistics is based
10 on the demographic characteristics of said customer.

58. The system of claim 43, wherein said means for associating a reorder frequency comprises assigning a reorder frequency to at least one item in said reorder list based on the past history of purchases of said customer.

59. The system of claim 43, wherein said means for associating a reorder
15 frequency comprises assigning a reorder frequency to at least one item in said reorder list based on the past history of purchases of customers in said database of customers having similar profiles to said customer.

60. The system of claim 59, wherein said similar profiles are based on demographic characteristics.

20 61. The system of claim 43, further comprising means for storing a voice message on a voice mail service of said customer, notifying said customer that said electronic notification has been transmitted.

62. The system of claim 43, further comprising means for storing a voice message on an answering machine of said customer, notifying said customer that said electronic notification has been transmitted.

63. The system of claim 43, wherein said database of customers includes a customer identifier and a customer password associated with said customer, and
5 further comprising:

means for receiving a communication by said first computer system over said network of said customer identifier and said customer password of said customer;

10 means for receiving an additional selection of one or more products from said database of products from said customer;

means for storing data in said first computer system indicating a shopping basket for said customer responsive to said additional selection of one or more products; and

15 means for transferring at least one item from said shopping basket to said reorder list.

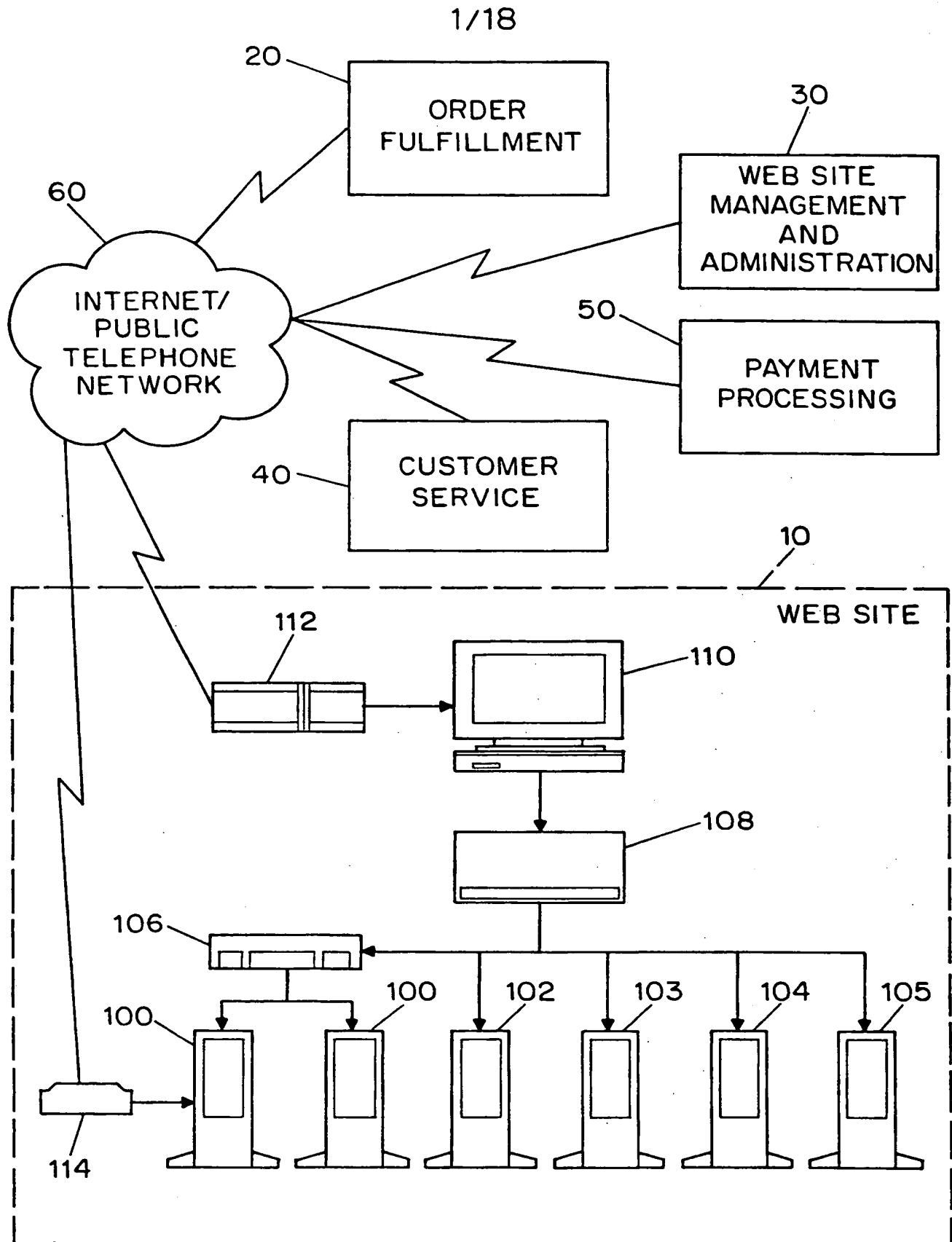


FIG. 1

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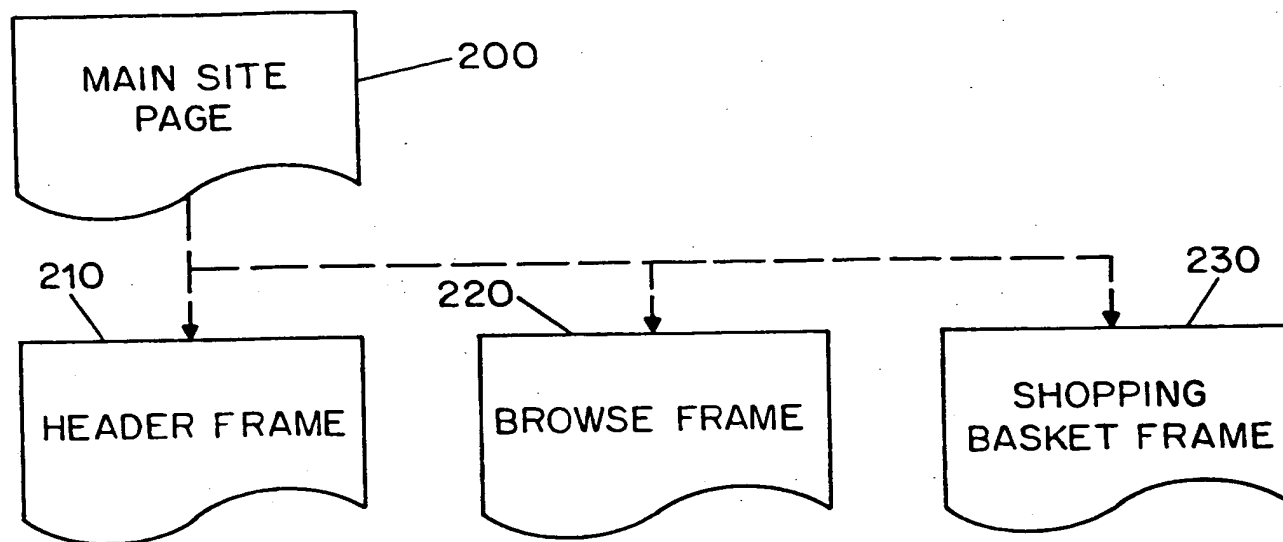


FIG. 2

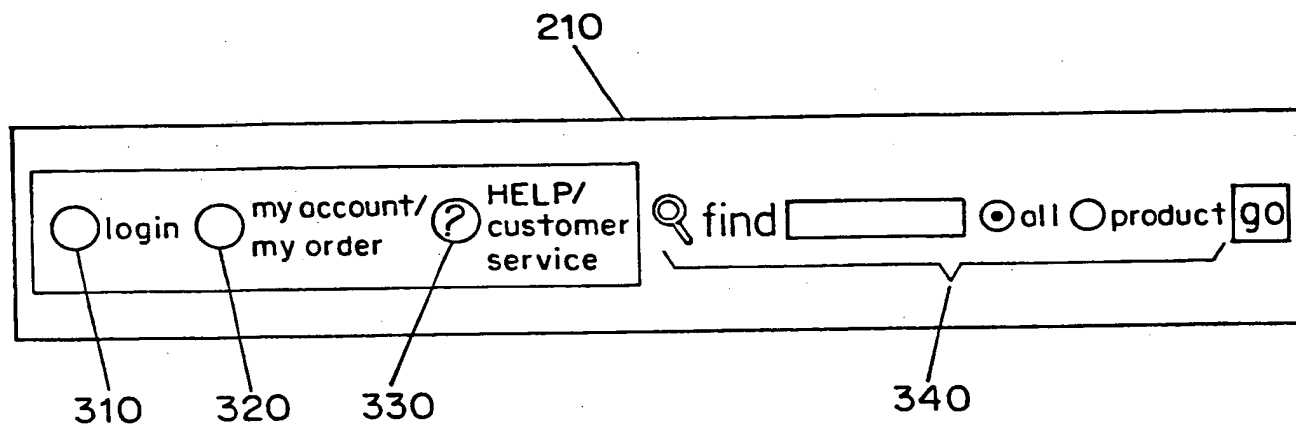


FIG. 3

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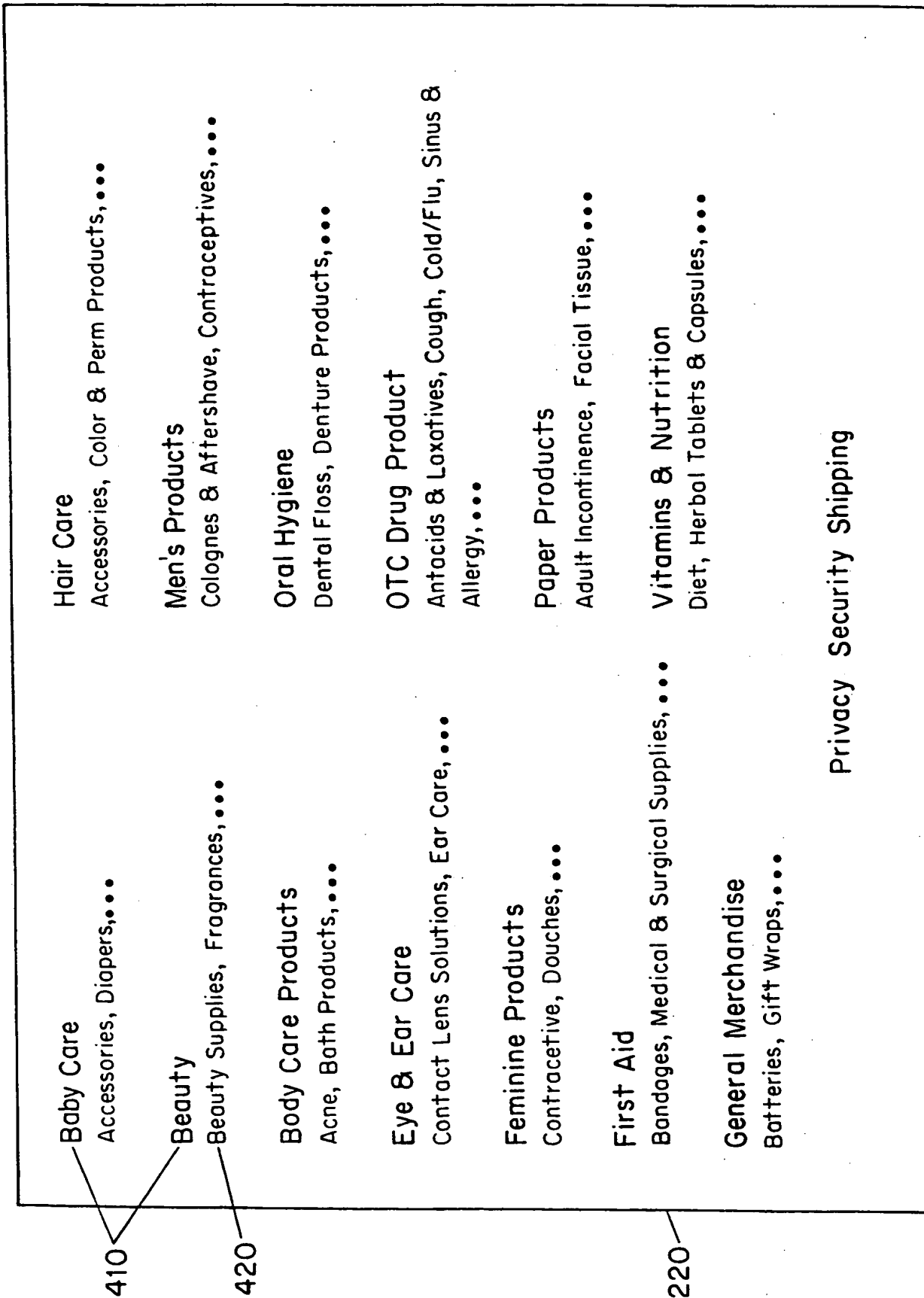


FIG. 4A

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400a

All Departments:
Men's Products
Select a Department

- Colognes & Aftershave
- Contraceptives
- Hair Care
- Miscellaneous
- Razors & Blades
- Shaving Cream

420

420

FIG. 4B

400b

Men's Products
Razors & Blades
There are 101 products in this category

Page ▼ of 6

Select a Product:

Product Description	Size	Price
Product X	10 ct.	\$ 9.44
Product Y	7 oz.	\$ 2.10
Product Z	2 Case	\$ 14.36**

** Out of Stock

◀ previous 20 matches next 20 matches ▶

FIG. 4C

SUBSTITUTE SHEET (RULE 26)

5/18

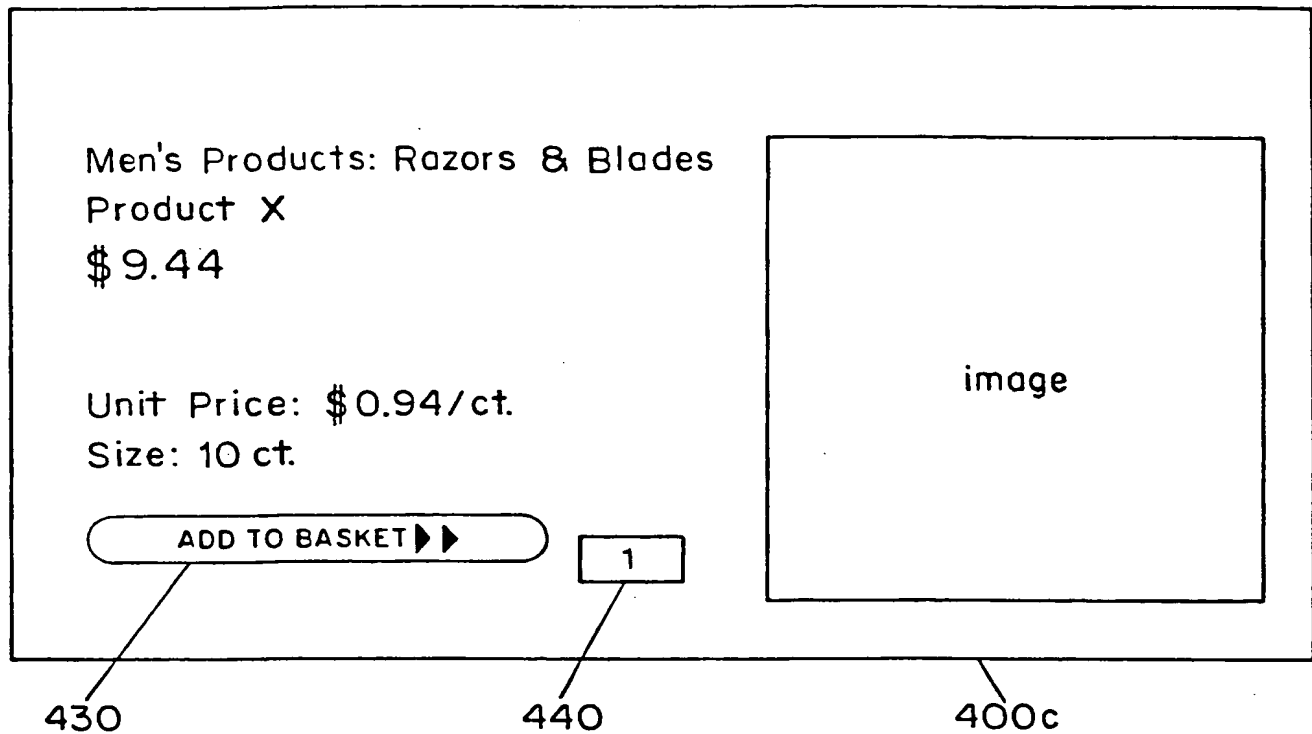


FIG. 4D

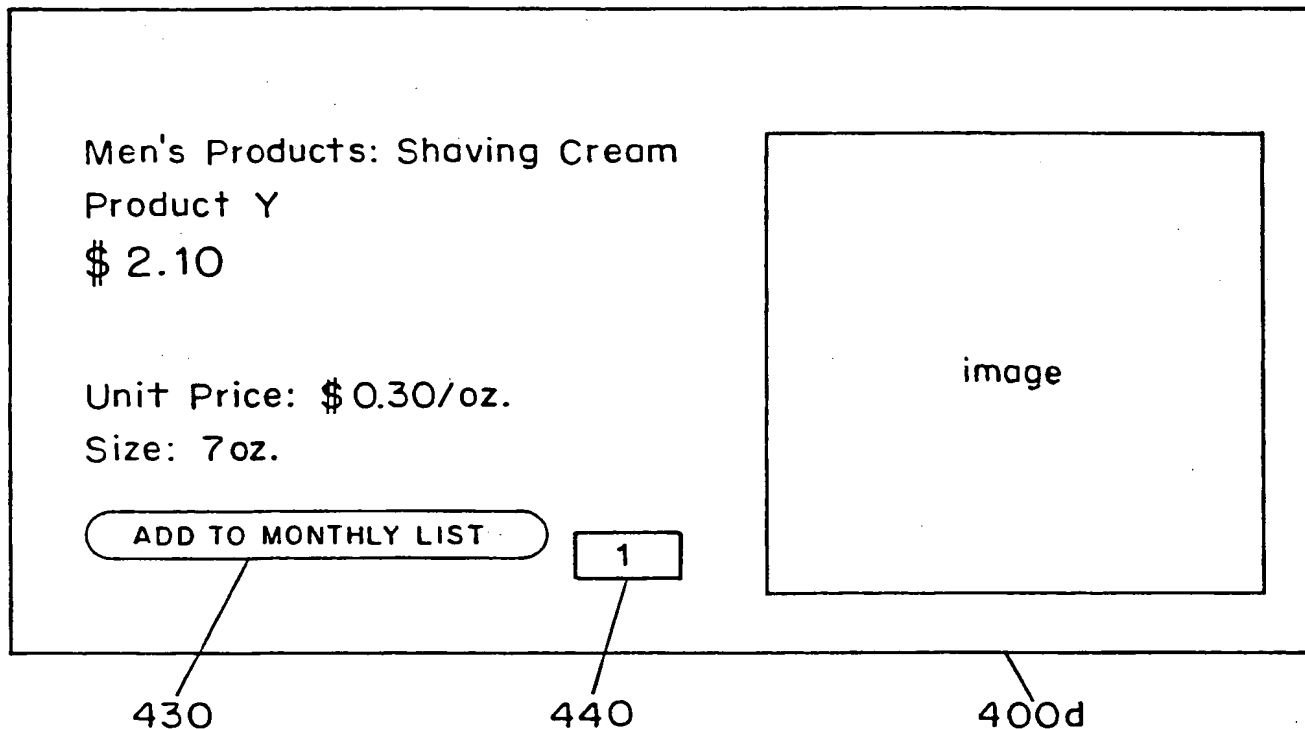


FIG. 4E

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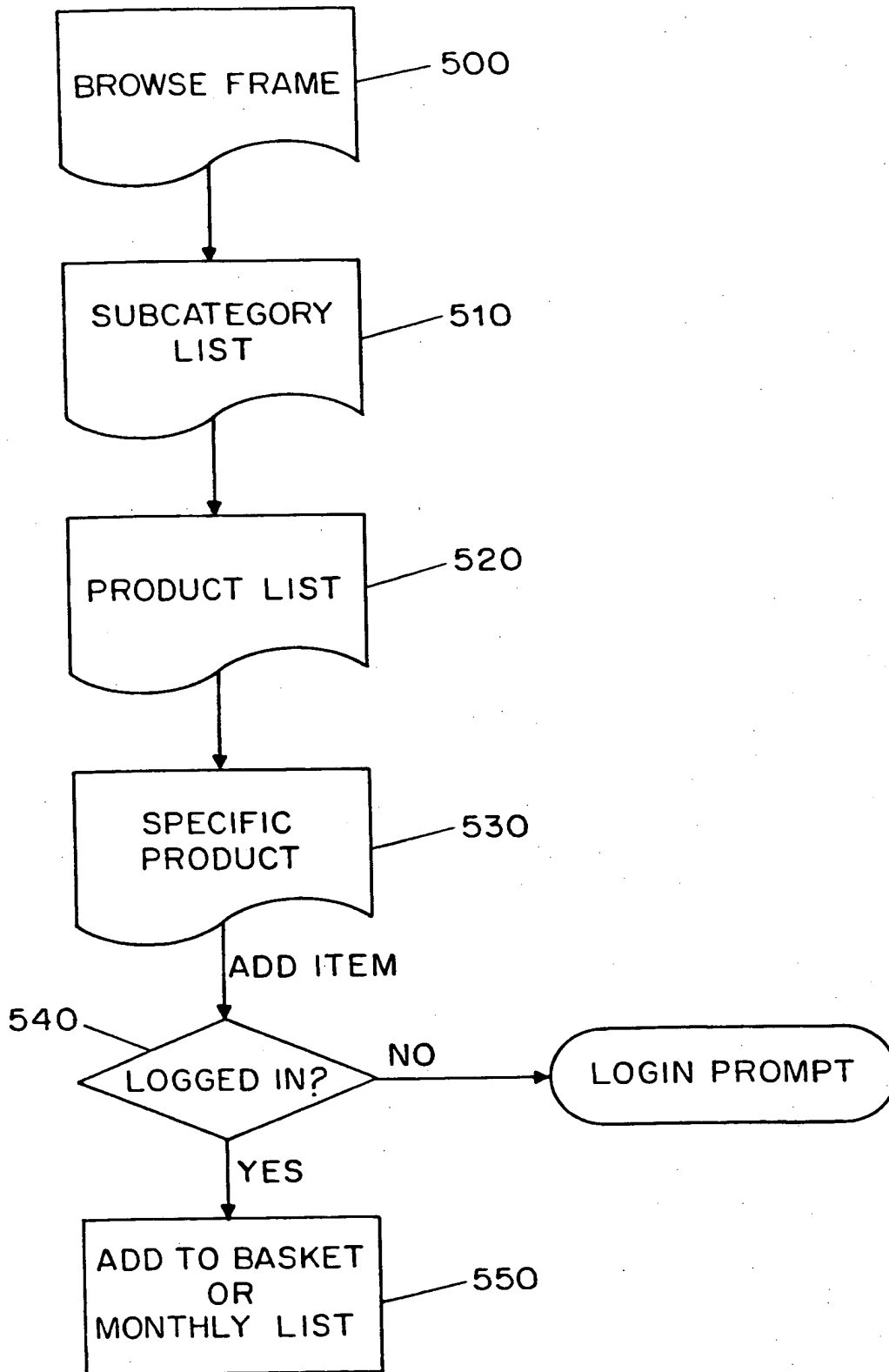


FIG. 5

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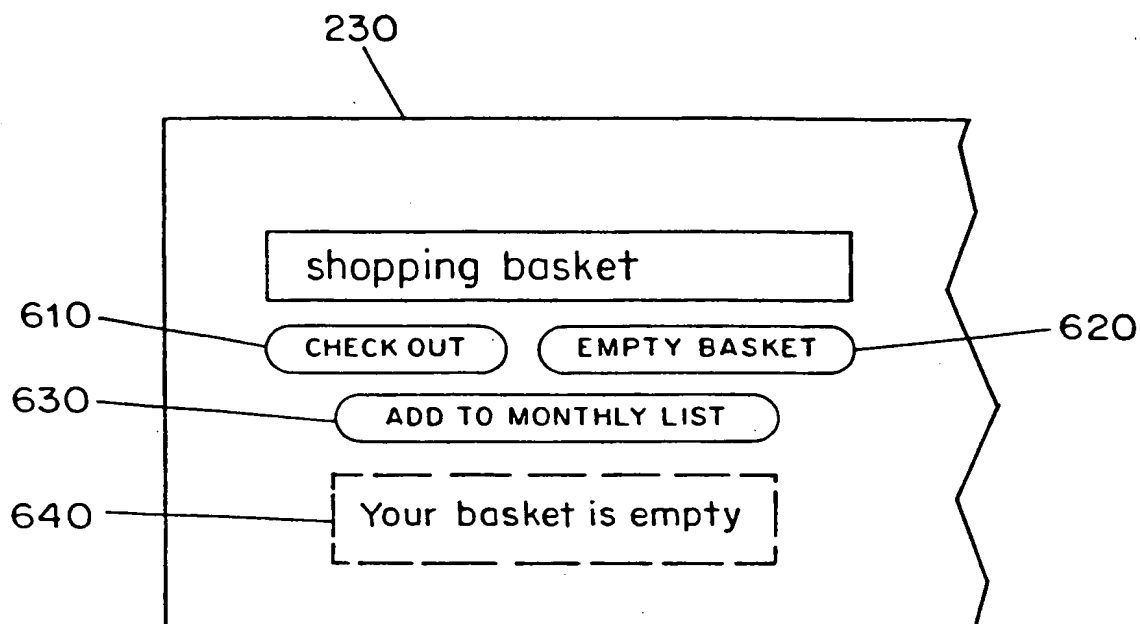


FIG. 6A

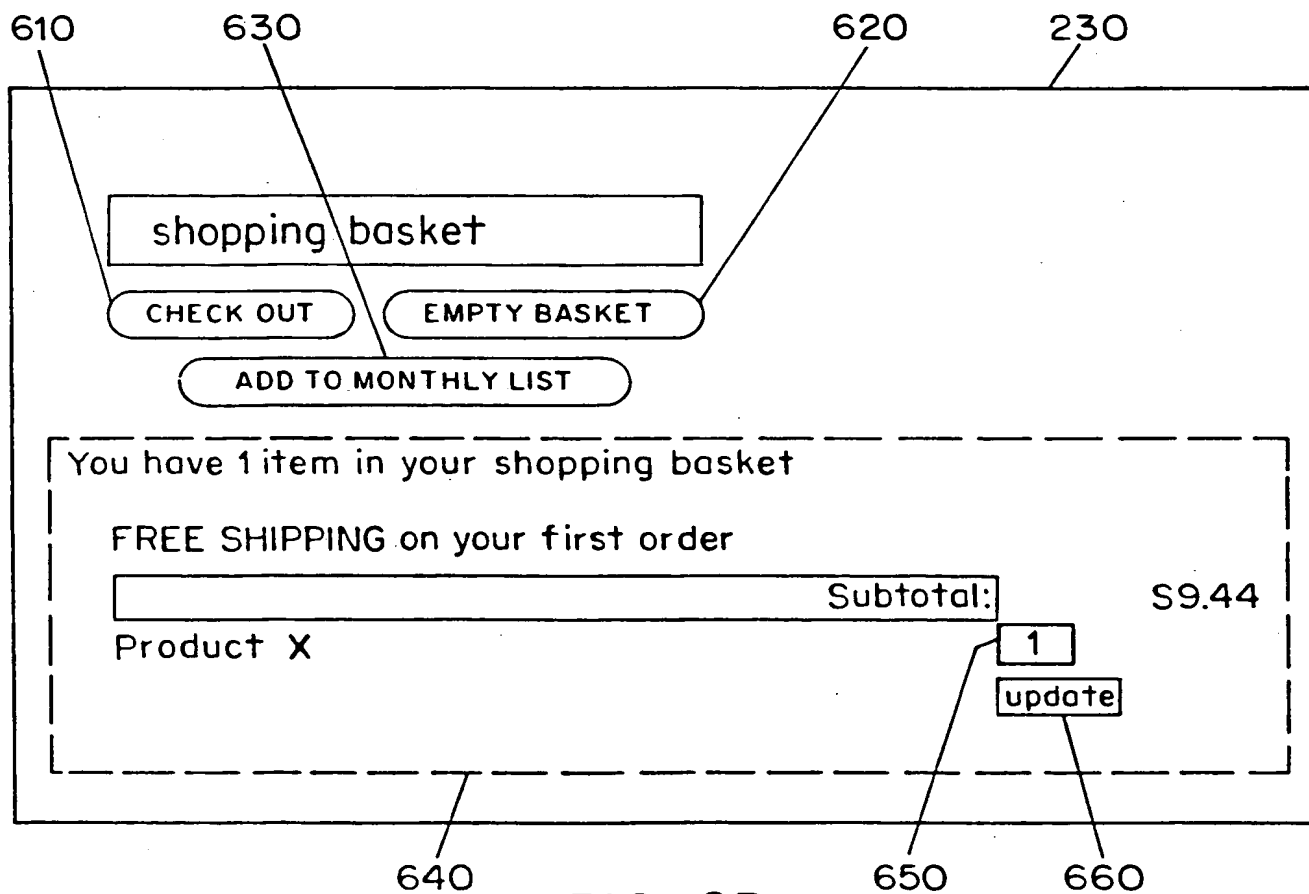


FIG. 6B

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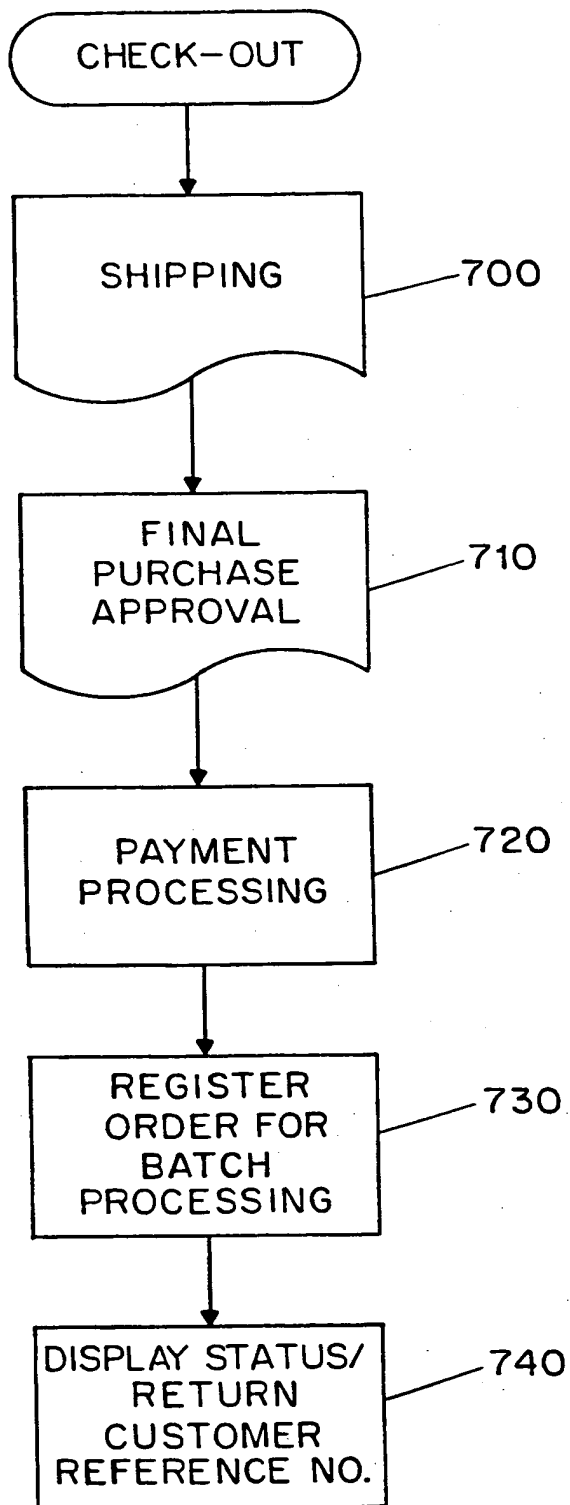


FIG. 7

800a

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Shipping

If you need to change any items, please go to the shopping basket to correct them.

If the order is correct, then please fill out the shipping instruction below and press the "Total" button. This will show you what your total cost (including tax and shipping) will be. If the total is satisfactory, then you'll be able to complete the purchase.

Partial shipments

☒ Check this box to accept partial shipments-- if an item is unavailable the remainder of your order will be sent anyway. } 805

Shipping Method

UPS Ground Tracking } 810

Shipping Address

Name: 820Street: City: State Code: ▼ } 830ZIP Code: Phone: 840

850

FIG. 8A

800b

10/18

Final Purchase Approval

Your purchase will cost \$10.12. Please enter your payment information and press the "PURCHASE" button below.

Subtotal: \$9.48
Shipping: \$0.00
Tax: \$0.64
TOTAL: \$10.12

860

CREDIT CARD INFORMATION

Enter or change your payment information. Changing payment information acts upon this order as well as all scheduled orders.

Name on Card:
Card Number:
Type: ▼
Expiration Date: ▼ ▼

870

Billing Address

Name:
Street:
City:
State: ▼
ZIP Code:
Phone:

880

purchase

890

FIG. 8B

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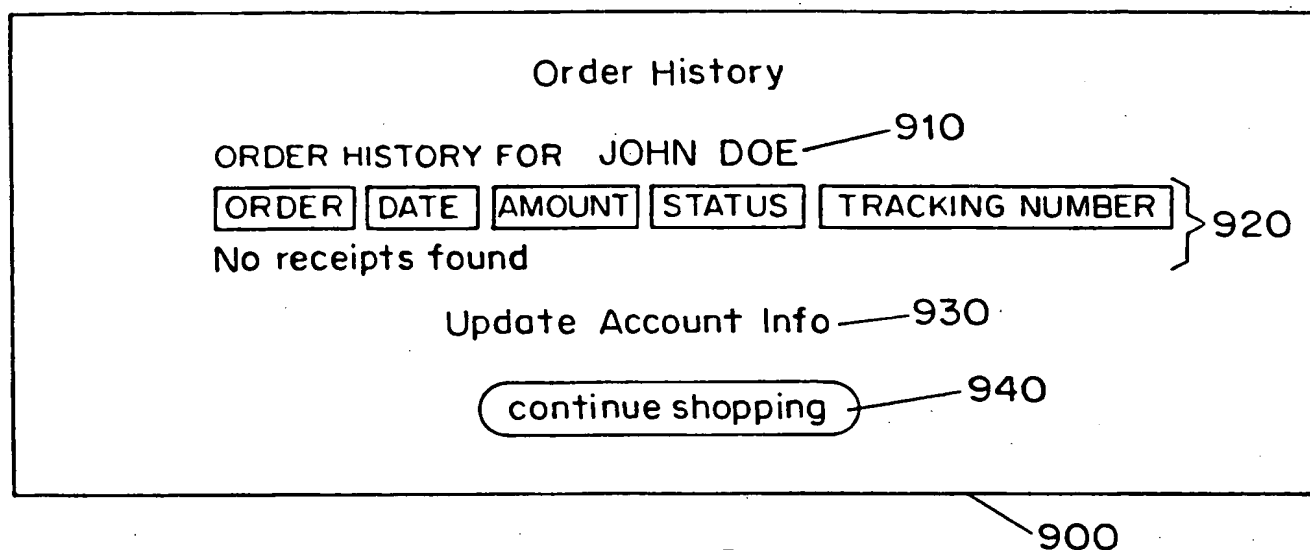


FIG. 9

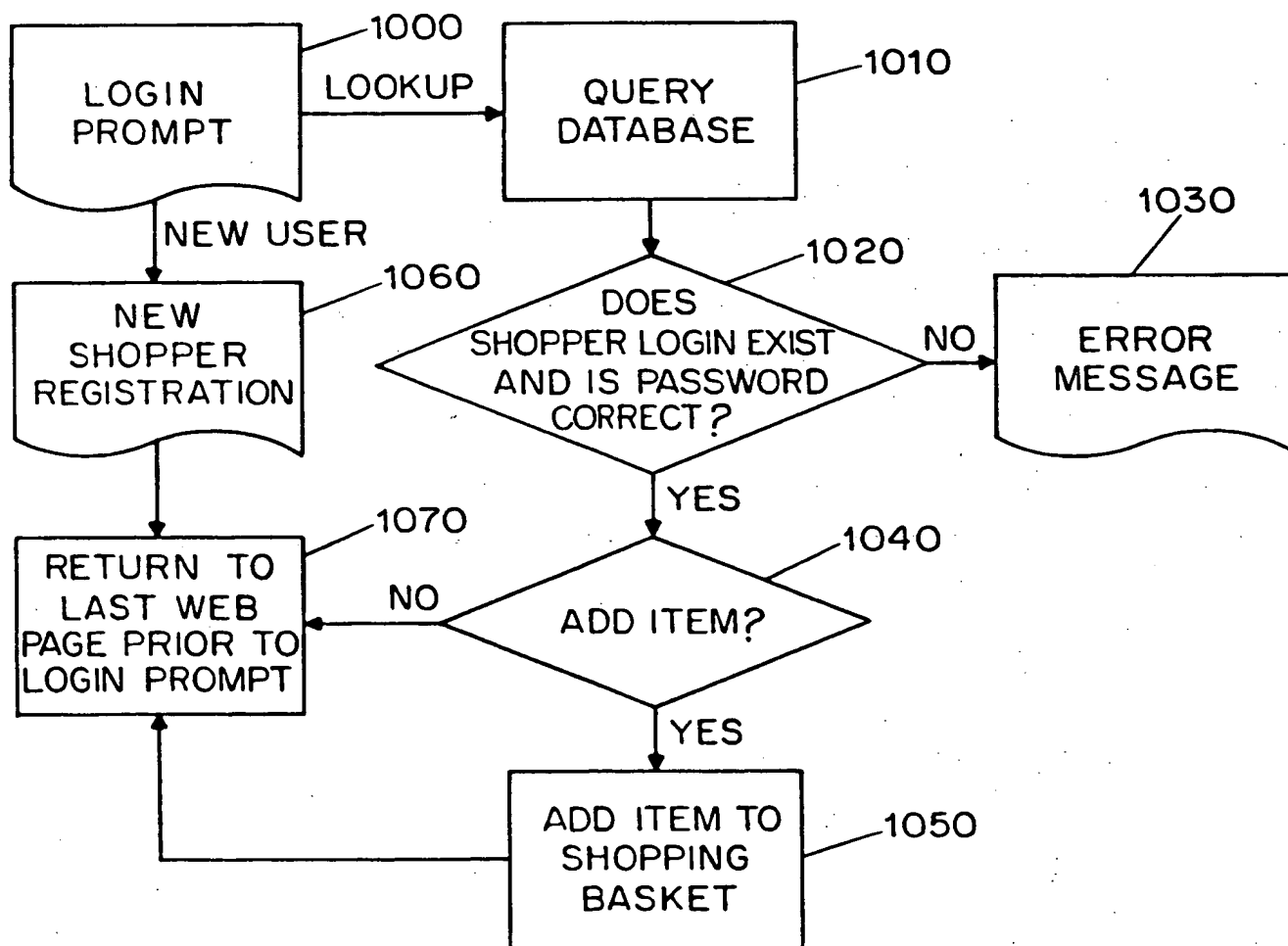


FIG. 10

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1100

Shopper Login

If you are a returning shopper, please your email and password.

Email:

Password:

If You are a NEW USER, Click HERE

1110

1120

lookup

1130

1140

FIG. 11

1200

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New Shopper

Please enter the following information

Name: 1210

Email: 1220

Password: 1230

Password again: 1230

Street: 1240

City: 1240

State: ▼ 1240

ZIP Code: 1240

Phone: 1250

1260

FIELD LABELS IN BOLD INDICATE REQUIRED FIELDS

FIG. 12

1300a

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Monthly List: Shipping

Please fill out the shipping information for your monthly order. Once you are done, press the "Proceed to Next Step" button to move on to your billing information page.

Partial shipments

☒ Check this box to accept partial shipments--if an item is unavailable the remainder of your order will be sent anyway.

Shipping Method

Shipping Address

Name: Street: City: State Code: ZIP Code: Phone:

FIG. 13A

1300b

15/18

Monthly List: Payment

Please update your payment information below and press the "DONE" button to finish entering shipping and billing information for your monthly order. However you will be billed only when an order is shipped to you.

CREDIT CARD INFORMATION

Enter or change your payment information. Changing payment information acts upon this order as well as all scheduled orders.

Name on Card:

Card Number:

Type: ▼

Expiration Date: ▼ ▼

Billing Address

Name:

Street:

City:

State: ▼

ZIP Code:

Phone:

FIG. 13B

1400

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Monthly List: Schedule

Add basket to my monthly list—1410

Adding your current basket to your monthly list causes the items in your basket to be added to your existing monthly list.

You may then fine tune the frequency of delivery of each item. When you are finished the items in your current basket will be shipped to you, while your monthly list will be used to remind you when it's time to reorder.

Replace monthly list with basket—1420

Replace monthly list with basket: This causes your existing monthly list to be replaced with the current shopping basket.

Note that the items in your existing monthly list will no longer be scheduled! When you are finished, your current basket will be shipped to you, and your monthly list will be identical to your current basket. The monthly list will be used to remind you.

Edit current monthly list without changes—1430

Edit current monthly list without changes: You may edit your existing monthly list separately from your current shopping basket. When editing is complete, you will need to log in again to retrieve your current shopping basket and continue shopping. Choosing this option allows you to move your scheduled next shipment, and fine tune the frequency of delivery for each item in your list.

FIG. 14

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Monthly List

Estimated Arrival date of monthly order shipment: October 3 1998

Your current basket is being used to build your monthly order. In approximately one month you will be sent an email reminder for your next monthly shipment.

Future Orders will NOT be shipped unless you respond to a confirmation email sent to you one week before the estimated arrival date of the shipment.

You regular EMAIL reminder provides an easy way to edit your monthly shipment. The email enables you to revisit this site and edit monthly list parameters including shipment dates, items and quantity information. You may continue to ADD to your first order using the button "Add to Monthly List" below.

Items shown in RED are NOT saved in your monthly list. Click "Save My Monthly List" before leaving this page.

DELETE	ITEM	QUANTITY	UNIT PRICE	FREQUENCY	ITEM SUBTOTAL	EST. ARRIVAL
X	Product X	1 +	\$9.44	Every 1 Month +	\$9.44	10/3/98
X	Product Y	1 +	\$2.10	Every 1 Month +	\$2.10	10/3/98
Subtotal					\$11.54	1575
Estimated Shipping					\$5.99	
Tax					\$0.78	
Total					\$18.31	

Change Shipping & Billing

Save My Monthly List

Add to Monthly List

Send Next Monthly Order

FIG. 15

1595

18/18

Dear John Doe:

The following items in your monthly list are scheduled to be shipped to you this month:

<u>Product</u>	<u>Estimated Arrival Date</u>
Product X	October 3, 1998
Product Y	October 3, 1998

To automatically return to your monthly list page and confirm the shipment of one or more of these items, please use the following World Wide Web hypertext link:

<http://www.mybasics.com/mybasics/frame.asp?reqpage=shopper%5Flookup%5Fschedorder&Confirm=&new=&edit=&laccess=10%2F13%2F58+21%3A18%3Z902+AM&mscssid=XYADD54EGAMSH2L4517Q>

These products will NOT be shipped to you unless you confirm your order.

1610

FIG. 16A

1600a

Dear John Doe:

The following items in your monthly list are scheduled to be shipped to you this month:

<u>Product</u>	<u>Estimated Arrival Date</u>
Product X	October 3, 1998
Product Y	October 3, 1998

To automatically return to your monthly list page and confirm the shipment of one or more of these items, please <<CLICK HERE>>.

These products will NOT be shipped to you unless you confirm your order.

1620

FIG. 16B

1600b

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/23590

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	MCCLAIN K: "Computer reminder improves compliance. Med-Minder calls patients when their prescriptions need refilling" CHAIN STORE AGE EXECUTIVE, APRIL 1989, USA, vol. 65, no. 4, pages 67-68, XP000901426 ISSN: 0193-1199 page 67, column 1, line 1 - line 52	1-63
Y	WO 97 23838 A (CATALINA MARKETING INT ;SCROGGIE MICHAEL C (US); KACABA MICHAEL E) 3 July 1997 (1997-07-03) page 22, line 1 -page 23, line 16 figure 17	1-63

-/-

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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14/04/2000

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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